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ABSTRACT

The document contains sequential lessons on map and global skills for grades K-6. The program relies on three commercial products: Maps Show the Earth and Where and Why (both by A.J. Nystrom) and Level A of the map and globe section from the Wisconsin Design for Reading Skills Development. Kindergarten students examine map representation, position of objects, and measurement of size. Grade 1 students examine maps as pictures of the earth's surface from above. They also discover ways in which rivers and mountains are depicted on maps. Second grade students study map symbols, directions, and the earth's rotation, and discuss purposes of maps. Third grade students focus on the globe and study direction (north, south, east, west) in depth. The fourth grade unit concentrates on the hemispheres, lines of latitude and longitude, and the grid system. In grade five, students learn about distortion, scale and measurement, continents and oceans, elevation, boundaries, and cities. Sixth grade students analyze the earth's rotation and learn to differentiate between climate and weather. Each lesson provides reproducible materials, behavioral objectives, correlations to the Nystrom text, extension activities, and references, and notes which criterion-referenced test in the Wisconsin Design should be used. Activities include games, map construction, and group work. (KC)

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ELEMENTARY
MAP AND GLOBE SKILLS
PROGRAM

1977

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NOV 7 1980

FORWARD

> Children develop skill in map and globe reading in settings where teachers know which variations of the skills are to be taught at each level and where there is some method of accountability for such teaching.

This recent statement by John Jarolimek includes the two bases used in the construction of this elementary map and globe skills program: it is systematically arranged and assessment is achieved through the use of criterion-referenced tests.

WHY

As abstract sources of information about space, maps are an aid to the professional, the pupil and the layman. It would not be an overstatement to say that maps remain the most omnipresent and omnipotent of the geographer's tools. Given the concentration of information in such a simplistic form, maps may well rank right behind letters and numbers as means of acquiring knowledge. And the ubiquitous road map probably best represents the practical importance of map reading to the layman.

In addition to their contribution to understanding of other places and other persons in our steadily "shrinking world", maps remain a relatively enduring source of information in a time of transient truths. Just as map units can be aimed at seeing parts of the world previously beyond even our mental vision, they can also aid us in appreciating parts of the world which were always in our physical vision, but usually overlooked.

More specifically, very few social studies series (including the Holt, Rinehart, and Winston Data Bank) contain sufficient and systematic map and globe skills instruction to qualify as a complete program. Yet, a review of the research on children's abilities to read maps by Haig Rushdoony has revealed that"

> researchers have found that social studies concepts and skills, when taught to children developmentally, systematically, and functionally, have been understood by these children to a greater degree than by those who have been taught the concepts and skills incidentally or traditionally.

Finally, on the four-quarter reporting form, four boxes exist to record whether the pupil "satisfactorily learned" map skills. Without a program of accountability, the range of skills covered and their assessment will remain too haphazard to make any mark in these boxes meaningful.

WHAT

Along with this guide, the map and globe skills program relies on three commercial products: A. J. Nystrom's _Maps Show the Earth_ and _Where and Why_ (see descriptions in appendices A and B) and Level A of the map and globe section of the study skills strand from the Wisconsin Design for Reading Skill Development (which constitutes the kindergarten component).

The guide's format comes from a similar, smaller program commissioned by Nystrom. A fourth of the extension activities were extracted from this same source. Another fourth were removed or inspired by a publication of the Wisconsin Department of Public Instruction, Skill Development in the K-6 Social Studies Program. The remaining half are a result of personal reading or teaching experience of myself and others.

The guide also correlates map and globe skills from both the Data Bank and Study Skills cited previously.

Expansion of the program is encouraged through the inclusion of a teacher input form. A later correlation of map skills used in booklets marketed by Xerox Education Publications is planned.

HOW

A three-part, inservice program is proposed to introduce this map and globe skills program.

1. Administration of a diagnostic test to the staff to assess their own needs. Given the demonstrated connection between teachers' knowledge of these skills and their pupils' ability to acquire the skills, to concentrate on the latter and ignore the former is almost assured futility.
2. The second section would explain the entire program. A proposed agenda follows. (The program's constructor will be available to assist or conduct this key session.)

AGENDA

- I. Rationale
- II. Program Guide
  - A. Contents
  - B. Utilization
- III. Accountability
  - A. Testing and Retesting
  - B. Recording and Reporting
- IV. Implementation
  - A. Starting Points
    - 1. Regular Grades
    - 2. EMH
  - B. Timing
    - 1. Lessons
    - 2. Units
  - C. Sharing
    - 1. Materials
    - 2. Ideas
      - a. Problems
      - b. Solutions
- V. Resources
  - A. In building
  - B. In District
- VI. Limits and Lack of Limits

3. For the final inservice session, the services of Mr. Mike Makowski, Nystrom's area representative, are recommended. This session will cover the purely physical aspects of the Nystrom products, using them to touch on skill areas in which the staff's cumulative test results indicated needs.

While the preceding has presumed implementation of the complete instructional program, the learning activities are adaptable to a variety of approaches, including small groups and individualized (even self-) instruction.

Just as the writer remains ready to assist any school or teacher in the implementation of this program, he would appreciate learning of unique applications of the program.

PROGRAM FORMS

LESSON NUMBER: ______________________

ADDITIONAL EXTENSION ACTIVITIES:

OTHER REFERENCE MATERIALS:

SUGGESTED PROGRAM IMPROVEMENTS:

TEACHER'S NAME: __________________________

TODD SCHOOL
MAP AND GLOBE SKILLS
PROGRAM REPORT FORM

KEY

☐	○	⧄	☒
HAS NOT HAD SKILL	EXPOSED TO SKILL	COMPETENCE (70-79% on posttest)	MASTERY (80-100% on posttest)

ESENTATION		1	MAIN DIRECTIONS		11	CONTINENTS AND OCEANS		21
POSITIONS OF OBJECTS		2	DIRECTIONS ON GLOBES		12	ELEVATION		22
ASUREMENT: SIZE		3	DIRECTIONS ON MAPS		13	RIVERS		23
MAPS ARE PICTURES		4	COMPASS ROSE		14	BOUNDARIES AND CITIES		24
MAN-MADE OR NATURAL		5	HEMISPHERES		15	DAY AND NIGHT		25
AP SYMBOLS		6	LATITUDE		16	SEASONS		26
EARTH'S ROTATION		7	LONGITUDE		17	TIME		27
AP DIRECTIONS		8	GRID SYSTEM		18	CLIMATE		28
WHAT IS A GLOBE?		9	DISTORTION		19	SPECIAL MAPS		29
WHAT IS A MAP?		10	MEASUREMENT AND SCALE		20	OTHER		30

TODD SCHOOL MAP AND GLOBE SKILLS REPORT FORM GUIDE

SKILL	NUMBER RIGHT FOR	
	COMPETENCE	MASTERY
1. REPRESENTATION	7	8+
2. POSITIONS OF OBJECTS	11	12+
3. MEASUREMENT: SIZE	9	10+
4. MAPS ARE PICTURES	7	8+
5. MAN-MADE OR NATURAL	7	8+
6. MAP SYMBOLS	7	8+
7. EARTH'S ROTATION	7	8+
8. MAP DIRECTIONS	5	6+
9. WHAT IS A GLOBE?	10-11	12+
10. WHAT IS A MAP?	7	8+
11. FOUR MAIN DIRECTIONS	5	6+
12. DIRECTIONS ON GLOBES	-	5+
13. DIRECTIONS ON MAPS	6	7+
14. COMPASS ROSE	9	10+
15. HEMISPHERES	10	11+
16. LATITUDE	8	9+
17. LONGITUDE	10	11+
18. GRID SYSTEM	5	6+
19. DISTORTION	-	5+
20. MEASUREMENT AND SCALE	6	7+
21. CONTINENTS AND OCEANS	8	9+
22. ELEVATION	-	4+
23. RIVERS	6	7+
24. BOUNDARIES AND CITIES	-	5+
25. DAY AND NIGHT	6	7+
26. SEASONS	5	6+
27. TIME	-	5+
28. CLIMATE	-	5+
29. SPECIAL MAPS	-	5+

CHILD'S NAME	1 21	2 22	3 23	4 24	5 25	6 26	7 27	8 28	9 29	10 30	11 31	12 32	13 33	14 34	15 35	16 36	17 37	18 38	19 39	20 40
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13																				

KINDERGARTEN LESSON 1: MAP REPRESENTATION

Required Materials: Wisconsin Design Study Skills--Level A
Skill 1

Behavioral Objective:

1. The child reproduces an arrangement of objects in his environment through the use of three-dimensional models (e.g., the child places blocks on a floor map to reproduce the actual arrangement of houses in his neighborhood).

Nystrom Correlations:

1. Maps Show the Earth
2. Map Symbols and Geographic Concepts Charts, teacher's guide (1969), pp. 6, 8, 11, 13-14, and 37-38.

Extensions Activities:

1. Construct a paper sculpture mural (See Hawkins, 1975)
2. Use three-dimensional models of an area. Use blocks and models to represent buildings.
3. After an on-the-spot observation of the school grounds or the immediate vicinity, the pupils construct a three-dimensional floor map of the area.
4. The children can take an excursion near the school for the sole purpose of noticing buildings and streets. These buildings and streets can then be represented by pictures drawn by the children on a large sheet of paper placed on the floor.

Reference Materials:

1. American Education Publications, Readiness for Map Skills, Book A (1971), p. 3.

Criterion-Referenced Test: The Wisconsin Tests of Reading Skill Development, Test Administrator's Manual: Study Skills, Level A-Form P, pp. 8-9.

Holt Correlations:

Criterion-Referenced Test: The Wisconsin Tests of Reading Skill Development, Test Administrator's Manual: Study Skills, Level A-Form P, pp. 5-6.

Holt Correlations:

KINDERGARTEN LESSON 2: POSITIONS OF OBJECTS

Required Materials: Wisconsin Design Study Skills--Level A
Skill 2

Behavioral Objective:

1. The child describes the positions of objects and representations of objects in relation to other objects and representations with the terms: right-left, up-down, on, between, near (beside), behind-in front of (back-front), and below-above (under-over).

Nystrom Correlations:

1. Maps Show the Earth
2. Map Symbols and Geographic Concepts Charts

Extension Activities:

1. Students learn the proper use of the words by acting out pictures and/or questions.
2. Use musical games to test students' understanding of words. Students act out calls.
3. Use photos or slides from NASA of rockets, spaceships, the earth from space etc. to show objects going up (away from the earth) and down (towards the earth). Use other illustrations such as see-saws, trees with roots. Ask students to think of things that go up and down in relation to the earth's surface.

Reference Materials:

1. Macmillan, Extra! 6 (1975), p. 23
2. Macmillan, Extra 11! (1975), pp. 4-5
3. Macmillan, Finding Out, workbook, teacher's edition (1974), p. 51
4. Macmillan, More About Around the City, workbook, teacher's edition (1972), pp. 13, 46.
5. Macmillan, More About In the City, workbook, teacher's edition (1972), pp. 34, 47, 59.
6. Macmillan, More About Readiness Experiences, workbook, teacher's edition (1972), p. 4.
7. Scott,Foresman, Splendid Journey, teacher's edition (1974), pp. 44-45.
8. Scott,Foresman, Splendid Journey, teacher's edition(1974), workbook, p. 1.
9. Scott,Foresman, Starter Concept Cards, teacher's edition (1974), pp. 290-294, 305-10, 314-18, 321-24, 329-30, 353-4.
10. Scott, Foresman, Starter Concept Cards, workbook, teacher's edition (1974), pp. 62-63, 65-6, 71-2, 75-6.
11. Macmillan, Read and Tell 3, teacher's guide (1975), pp. 35, 38, 65, 67, 92, 94-5.

HOLT CORRELATIONS: 2-2-20

KINDERGARTEN LESSON 3: MEASUREMENT: SIZE

Required Materials: Wisconsin Design Study Skills--Level A
Skill 3

Behavioral Objective:

1. The child uses the descriptive terms bigger-smaller, higher-lower, and taller-shorter to compare sizes of objects and representations of objects.

Nystrom Correlations:

1. Map Symbols and Geographic Concepts Charts

Extension Activities:

1. Using illustrations and games, ask students questions requiring them to figure out the meaning of the words. Example: Ask students to group books or themselves into categories of larger, smaller and taller, shorter.
2. Give students two maps; on one map have students color all the water masses in one color that would be considered larger and in another color all those considered smaller. Do the same on the other map for land masses.
3. Give students two maps with land and water masses already clearly colored; on one map have students circle all of the large (or small) water masses. Do the same on the other map for land masses.

Reference Materials:

1. Macmillan, Extra! 5 (1975), p. 30.
2. Macmillan, More About Readiness Experiences, workbook, teacher's edition (1972), p. 17.
3. Macmillan, Read and Tell 3, teacher's guide (1975), pp. 5-7, 81.
4. Macmillan, Who Can?, Lost and Found and Hats and Bears, workbook, teacher's edition (1975), p. 13.
5. Scott,Foresman, Moving Ahead, teacher's edition (1974), pp. 72-73.
6. Scott,Foresman, Moving Ahead, workbook, teacher's edition (1974), p. 17.
7. Scott, Foresman, Ready to Roll, teacher's edition (1974), pp. 45-47, 145.
8. Scott, Foresman, Ready to Roll, workbook, teacher's edition (1974), pp. 6, 52.

Criterion-Referenced Test: The Wisconsin Tests of Reading Skill Development, Test Administrator's Manual: Study Skills, Level A-Form P, pp. 6-7.

Holt Correlations: 2-2-12 & 13

FIRST GRADE LESSON ONE: MAPS ARE SPECIAL PICTURES OF THE EARTH'S SURFACE

Required Materials:

1. Filmstrip and Cassette: Maps Are Pictures
2. Workbook pages 4-5 and 6

Behavioral Objectives:

1. Students will define a map as a picture of some part of the earth's surface.
2. Students will recognize the existence of many types of maps.
3. Students will relate through class discussion their experiences in using maps.

Wisconsin Design Study Skills Correlations:

1. A-1
2. A-2
3. B-3

Extension Activities:

1. First graders can begin developing map skills with treasure hunts, drawing exercises, and even making their own maps. Drawing a map of the classroom or playground develops spatial relationships and visual acuity.
2. The student should explain how an occupation or occupations use maps in their day to day work.
3. Show students examples of maps from different occupations asking them what purpose the map has. In groups , students draw simple maps for various occupations that they are interested in studying.
4. Have students provide a list of purposes for maps. Place their list on the blackboard.
5. As a starter, students can be asked to make a picture of something that they've seen outdoors. Explain to them that each of their pictures is a pictorial map. Alternatively, the teacher can take photographs of something that the child wants photographed.
6. See how many different examples of maps the children can bring in to the classroom. Display and label them on the bulletin board.
7. Take the children on a walk around the school attendance area. Point out how house numbers increase or decrease. Note how manes were written on the signposts. Point out that even-numbered buildings are on one side of the street and that odd-numbered buildings are on the other side.
8. Ask the students to speculate on why and how the first maps developed.

Reference Materials:
Holt Correlations: 2-2-10

FIRST GRADE LESSON TWO: MAPS PICTURE THE EARTH'S SURFACE FROM A POINT ABOVE

Required Materials:
1. Study Prints 8, 9, and 10
2. Filmstrip and Cassette: Maps are Pictures (optional review)
3. Workbook pages 8, 9, 10, 11, 12, 13, and 24

Behavioral Objectives:
1. Students will describe a map as a picture of the earth's surface seen from above.
2. Students will identify a very small map as representing a very large area on the earth.
3. Students will be able to find specific locations on a map.

Wisconsin Design Study Skills Correlations:
1. A-3

Extension Activities:
1. After children have constructed a three-dimensional map of an area, have them move from to the more abstract by using shapes to replace the three-dimensions representations. The size of the map can also be reduced so that pupils develop the understanding that reality can be placed on smaller areas.
2. Although any field trip helps the child understand that maps deal with the reality of the earth and therefore anything that is learned about maps has real significance, an even more ideal field trip would take classes to an elevated area (hill or tall building, e.g.) so that areal features can be better revealed.
3. In lieu of a field trip, color aerial photographs provide a reasonable three-dimensional micro-model of reality. Such aerial photographs should be angle shots rather than perpendicular ones). These aerial photographs can be related to maps of the same area.
4. After examining a map, the class can visit the same places.
5. Areas shown on a wall map can be compared with pictures of the same area.
6. Generous use of films and filmstrips showing the same area as seen on classroom maps is advised.
7. Make a list of miniatures and their larger equivalents (globe-real earth, toy truck-real truck, etc.).
8. Make a map of the classroom with squares for desks. Have the children label their desks with their names and label the desks of their neighbors.
9. As a prelude to making a larger map of the neighborhood, take a mini-field trip of one block. Observe the features on that block. Back in the classroom, make a map of this block.
10. Use the maps which follow this lesson to show the location

of the school in the district, the city, and the state. The same can be done on a United States and world map.

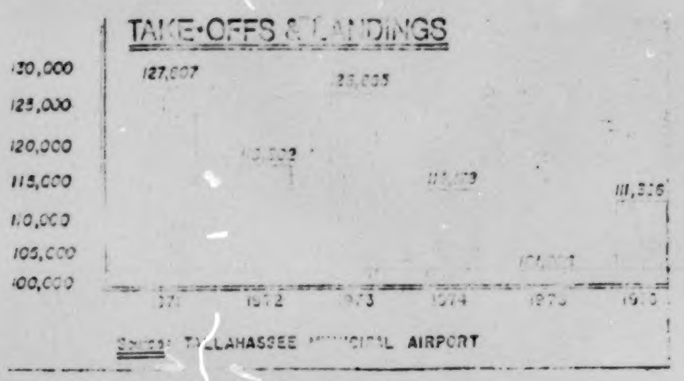
11. The page which immediately follows with shapes representing furniture may be used as an individual activity for each child. Provide each child with another sheet of paper for the floor of the room. The child should then color the furniture which s/he has in her/his room and cut it out, placing the pieces in the proper place. More advanced students could add windows, doors, and closets.
12. Children have a hard time understanding or describing distances. Show the children a map of the school building. Discuss their concept of the distances involved. Then go for a walk along the same area shown on the map. When back in the room, discuss the time involved in the walk. The same can be done for several blocks around the school. As a further extension, these concepts of time and distance can be discussed in relation to the district, city, and state maps which follow this lesson. The basic idea that more distance and time are involved in each.
13. Students can locate their homes on the district map which follows this lesson.
14. Practice Exercise #1. Use test directions provided below.

Reference Materials:

Criterion-Referenced Test: Maps Show the Earth Test One

Directions: The teacher will direct the students to put an "X" on all pictures which are maps. Points possible=9 There are six maps and three non-maps (a fact not to be revealed to the pupils).

Holt Correlations: 2-2-18; 2-2-12



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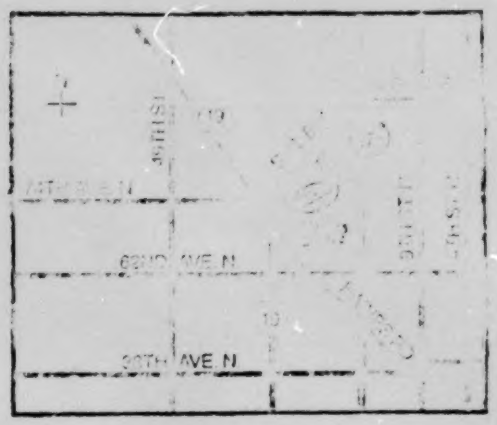
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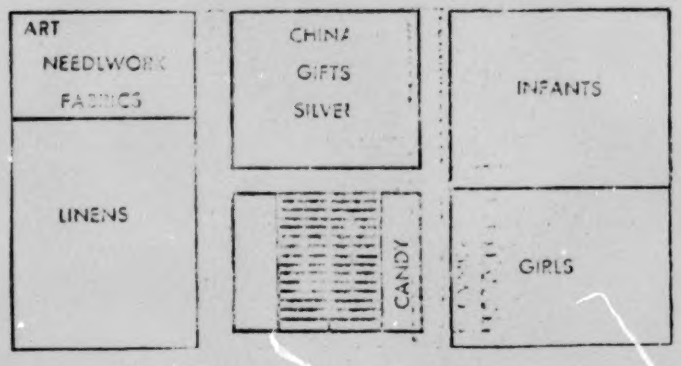
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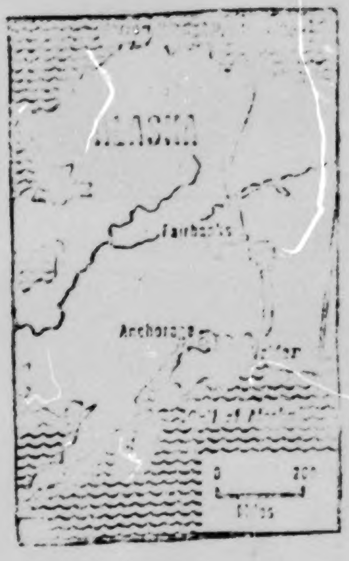
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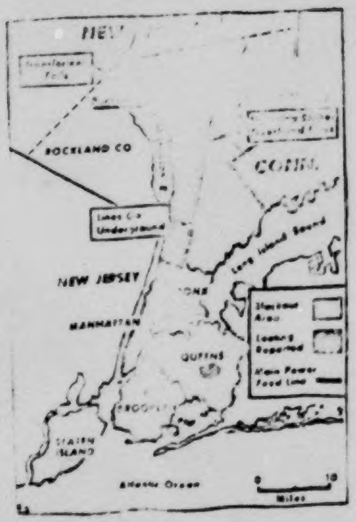
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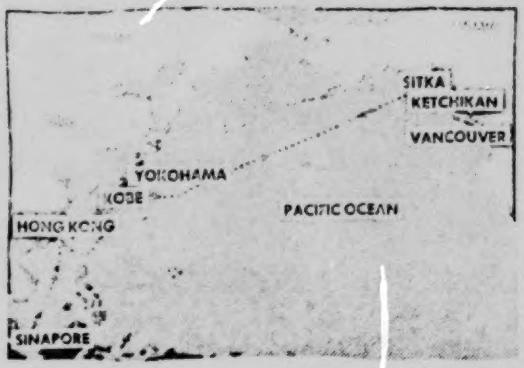
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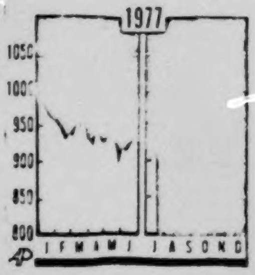
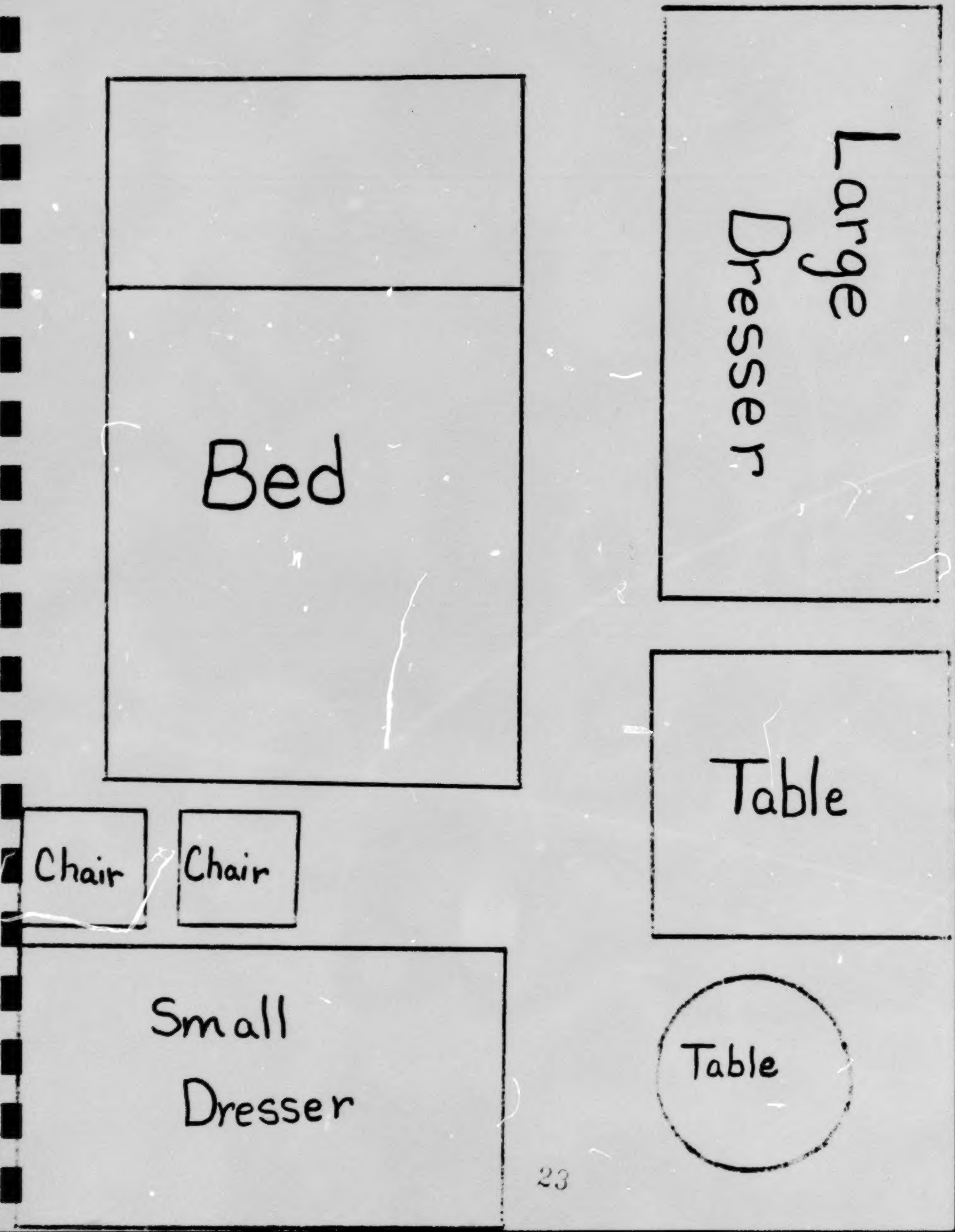


MAPS SHOW THE EARTH TEST #0


Large Dresser
Bed
Table
Chair
Chair
Small Dresser
Table

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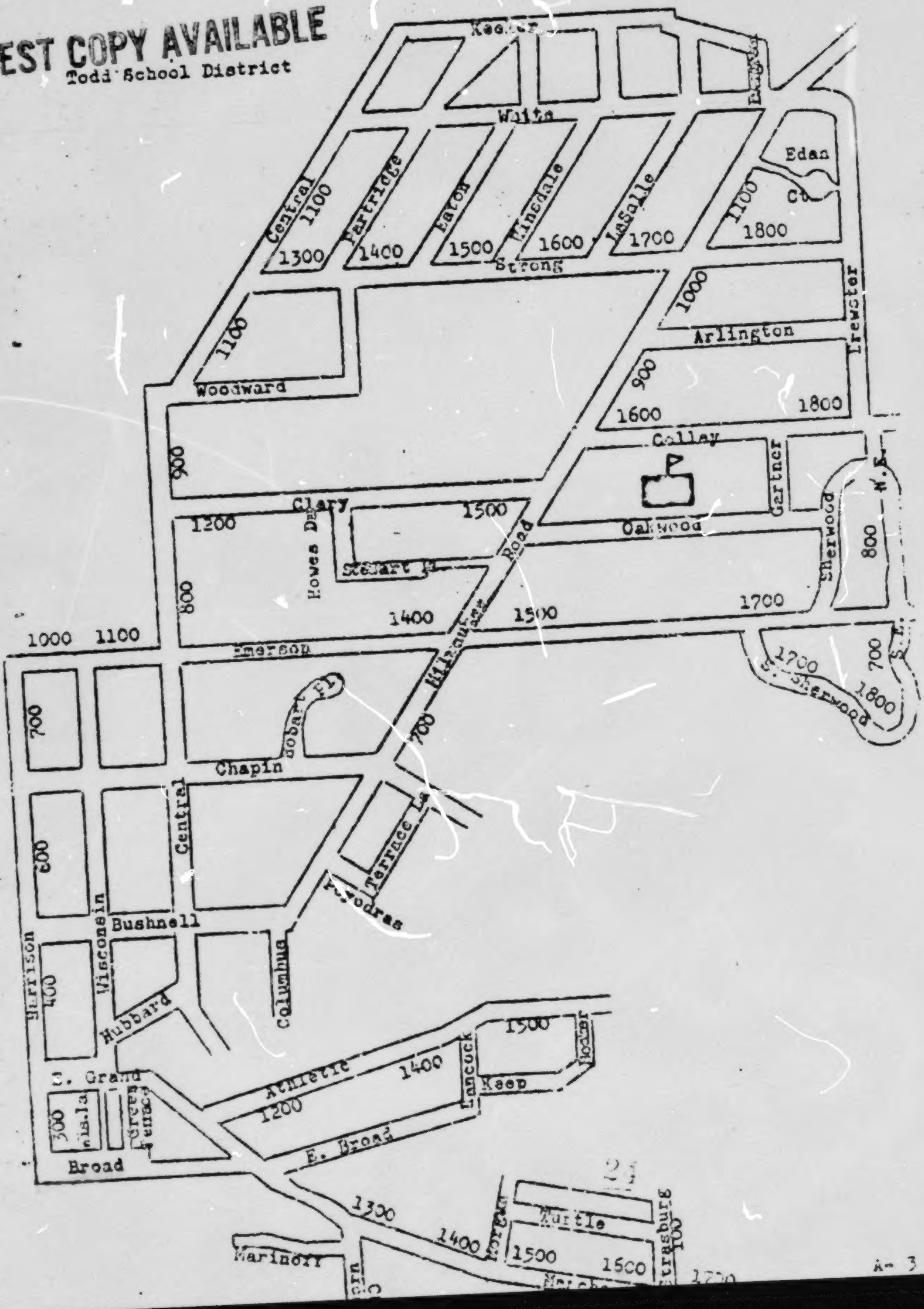
Todd School District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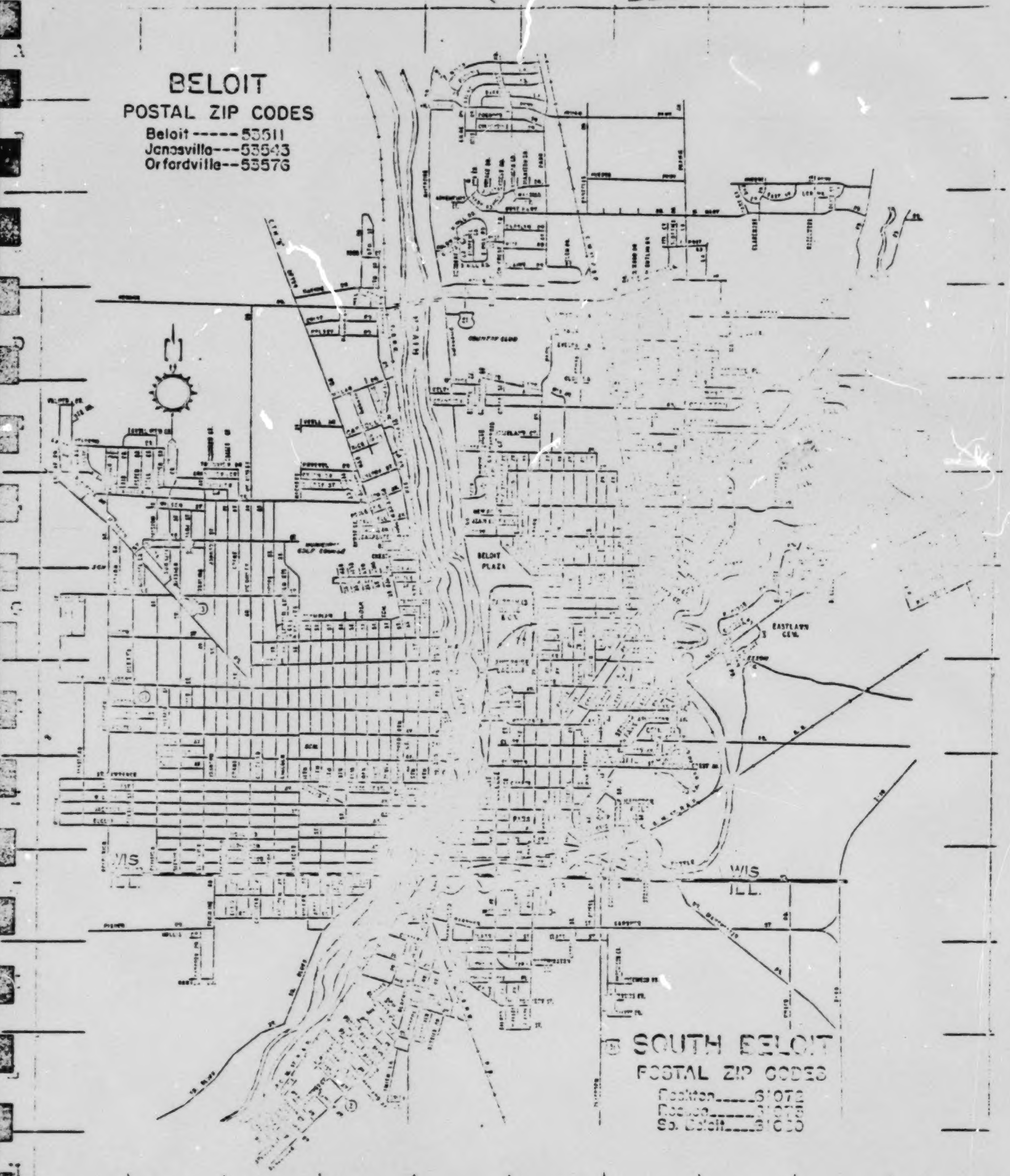
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Janesville---53543
Orfordville--53576
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COUNTRY CLUB
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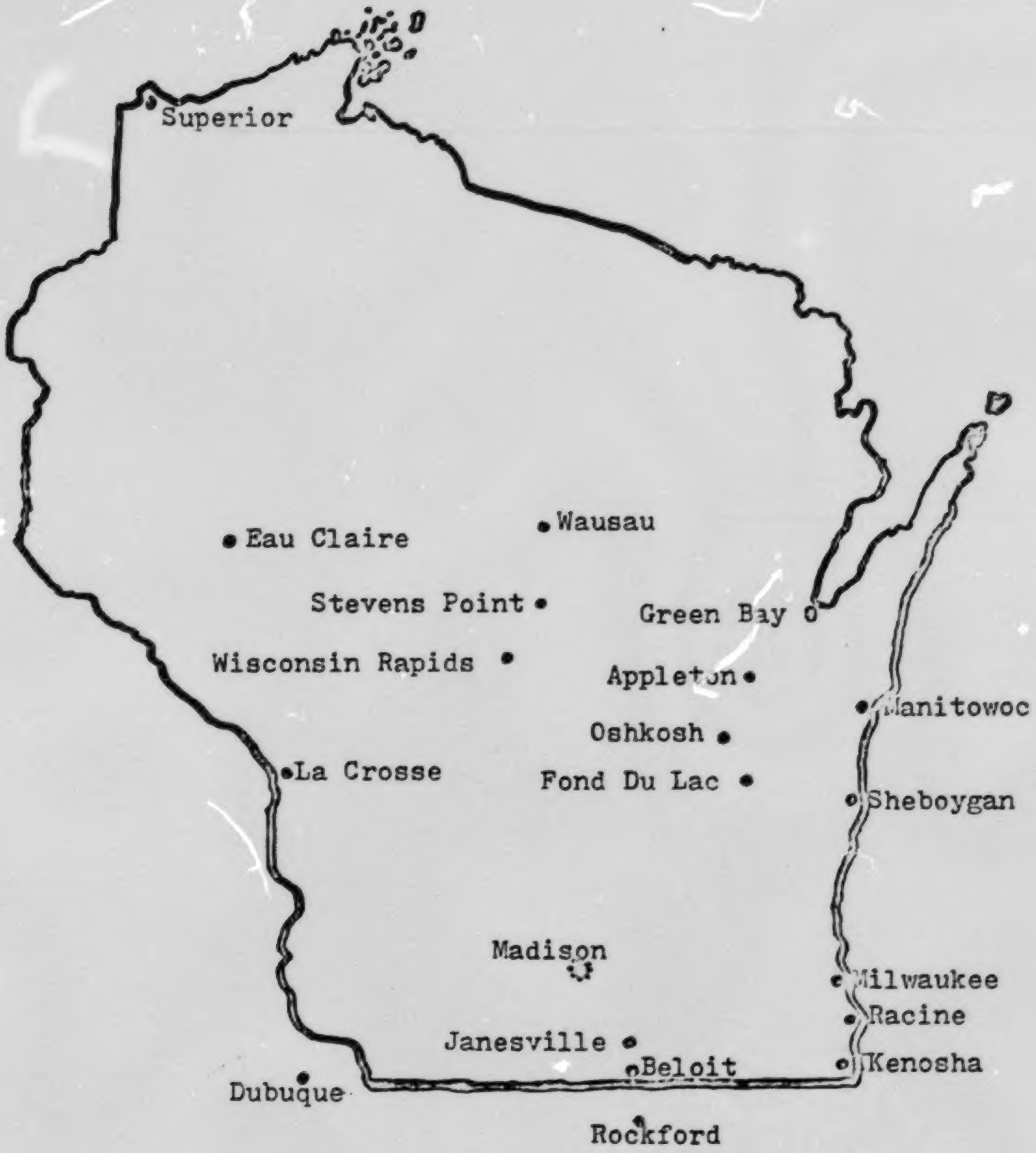
Roscoe______61073
So. Beloit____61080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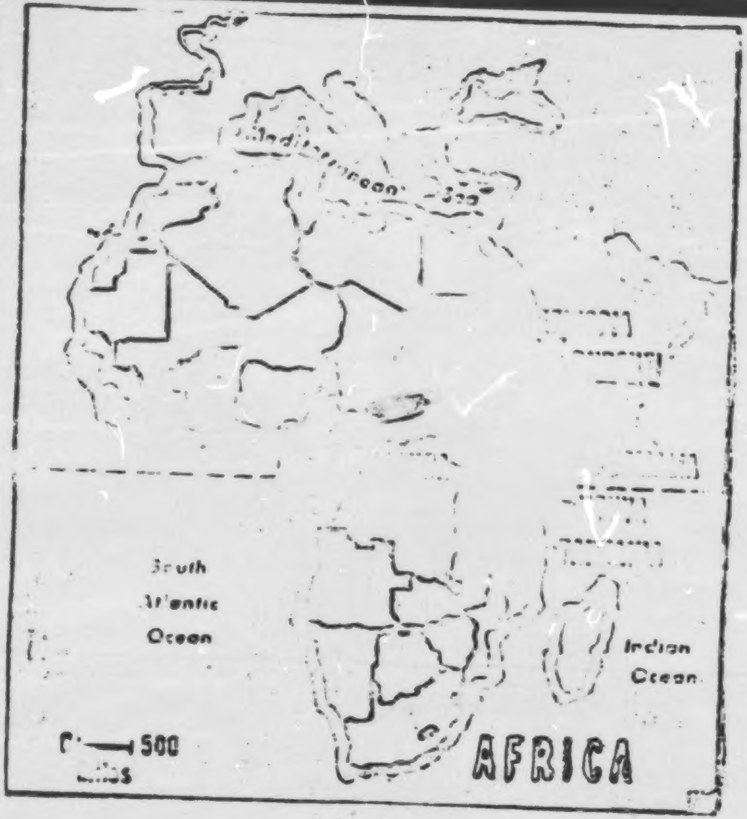
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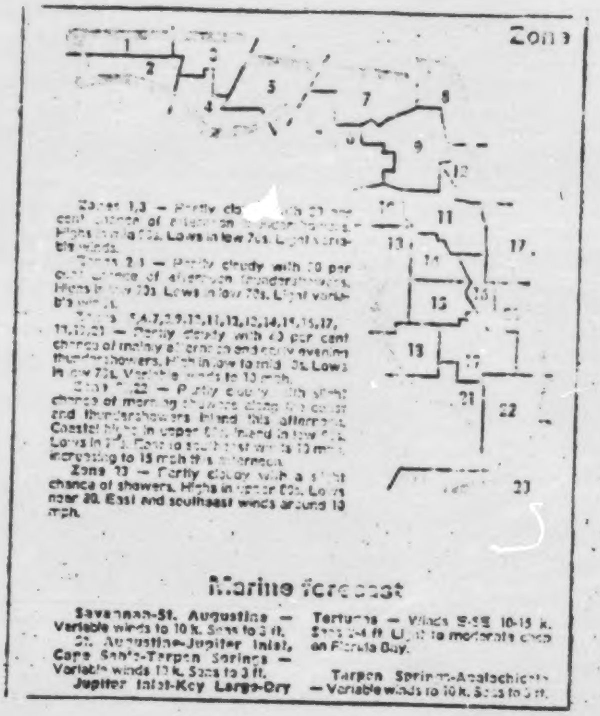
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Zones 1,3 — Partly cloudy with 20 per cent chance of afternoon thundershowers. Highs [illegible] 80s. Lows in low 70s. Light variable winds.

Zones 2,4 — Partly cloudy with 30 per cent chance of afternoon thundershowers. Highs in low 90s. Lows in low 70s. Light variable winds.

Zones 5,6,7,8,9,10,11,12,13,14,15,16,17, 19,20,21 — Partly cloudy with 40 per cent chance of mainly afternoon and early evening thundershowers. High in low to mid 90s. Lows in low 70s. Variable winds to 10 mph.

Zones 18,22 — Partly cloudy with slight chance of morning showers along the coast and thundershowers inland this afternoon. Coastal highs in upper 80s, inland in low 90s. Lows in 70s. East to southeast winds 10 mph, increasing to 15 mph this afternoon.

Zone 23 — Partly cloudy with a slight chance of showers. Highs in upper 80s. Lows near 80. East and southeast winds around 10 mph.

Marine forecast

Savannah-St. Augustine — Variable winds to 10 k. Seas to 3 ft.

St. Augustine-Jupiter Inlet, Cape Sable-Tarpon Springs — Variable winds 10 k. Seas to 3 ft.

Jupiter Inlet-Key Largo-Dry Tortugas — Winds E-SE 10-15 k. Seas 2-4 ft. Light to moderate chop on Florida Bay.

Tarpon Springs-Apalachicola — Variable winds to 10 k. Seas to 3 ft.

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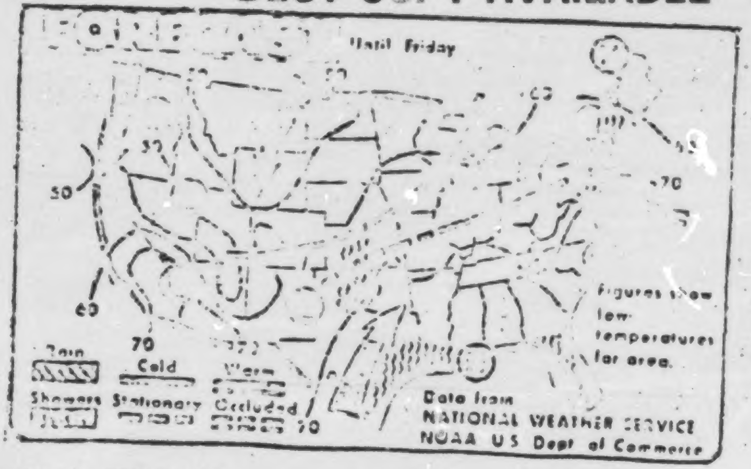
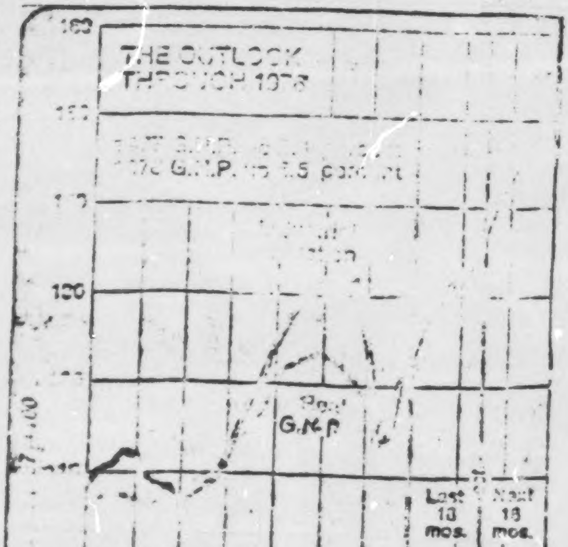
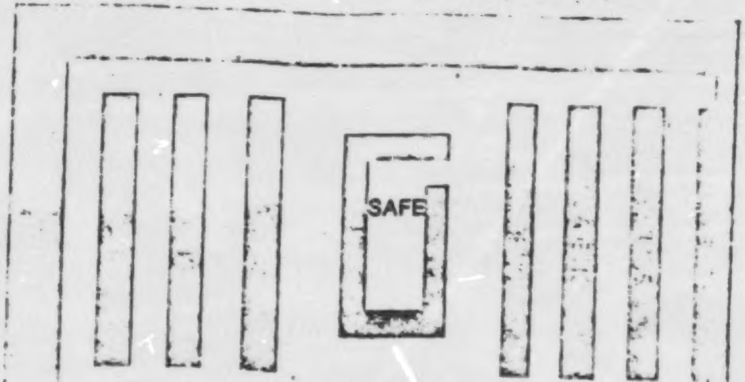

Until Friday
50
60
60
70
70
70
70
Rain
Showers
Cold
Stationary
Warm
Occluded
Figures show low temperatures for area.
Data from NATIONAL WEATHER SERVICE
NOAA U.S. Dept of Commerce





PRACTICE EXERCISE #1

FIRST GRADE LESSON THREE: MAPS SHOW NATURAL THINGS LIKE RIVERS AND MOUNTAINS

Required Materials:

1. Filmstrip and Cassette: Maps Are Pictures (optional review)
2. Study Prints 1 and 7
3. Workbook page 7

Behavioral Objectives:

1. Students will recognize the earth as made up of natural physical features.
2. Students will identify a variety of physical features which make up the earth's surface.
3. Students will complete a map showing the physical features of an area after seeing a picture of that area.
4. Students will define the shape of the earth as round like a ball.

Wisconsin Design Study Skills Correlations:

Extension Activities:

1. Have the children page through their social studies text to find pictures of physical features of the earth.
2. Use charts 13, 20, and 21 from Map Symbols and Geographic Concepts Charts. Have the children identify the physical features in the pictures. Compare the types of mountains.
3. When children go on field trips, they should be encouraged to identify physical features around them. Distinguish between these natural features and man-made features if appropriate.
4. Have the children bring in pictures of land features. Make certain that they are identified by their proper name (e.g., distinguish between a lake, a river and an ocean).
5. Make three diferent charts: one should be for water, one for land features and a third for vegetation. The children could bring in pictures or draw pictures for each category of physical land features. Discuss changes in relation to each of these categories. Discussion might include questions about the rate of change or how the change in one element might affect the change in another area.
6. The children can make their own contour maps of a known area or an imaginary area by making landforms in a box lined with plastic and filled with sand or dirt. Mountains, hills, valleys, as well as other features could be included.

Reference Materials:

Holt Correlations: 1-December 3; 3-3-2; 1-December 5 & 6

FIRST GRADE LESSON FOUR: MAPS SHOW MAN-MADE THINGS LIKE HIGHWAYS AND TOWNS

Required Materials:

1. Filmstrip and Cassette: Maps Are Pictures (optional review)
2. Study Prints 2, 3, 4, 5, and 11

Behavioral Objectives:

1. Students will identify mappable features on the earth's surface which have been made by man.
2. Students will distinguish between man-made features and natural features on the earth.
3. Students will recognize a map of the earth as including both natural and man-made features.

Wisconsin Design Study Skill Correlations:

Extension Activities:

1. Set up a two-sided chart: one side with man-made things and the other side with natural things. Have the children bring in pictures or draw pictures of man-made or natural earth features to place on the chart.
2. Discuss charts 35 and 36 from Map Symbols and Geographic Concepts Charts. Identify bridge, port, railroads, and highways.
3. Make flashcards out of various pictures. Have the pupils identify as natural or man-made. So that children may use individually, put the answer (stick-man for man-made and sun for natural) on the back of each card.
4. Visit a construction project. Discuss the amount of time needed to finish a construction project, such as a section of a highway.
5. Discuss city planning. The children should know their neighborhood well enough to describe shopping centers, churches, schools, etc. Emphasize in discussion that the choice for location of these areas is not a random choice.
6. Discuss with the children any changes (man-made) which have occurred in their neighborhoods that theyhave experienced. This could be anything from planting a garden to a new street.
7. Discuss what future changes (man-made) the children might desire in their neighborhood. Be sure that they justify their answers and adverse effects of such changes are also considered.
8. Have children page through their social studies text to find pictures of man-made features on the earth's surface.
9. The children can make models of various man-made features. These can be placed on a neighborhood map.
10. When children go on field trips, they should be encouraged

to identify man-made features around them. Distinguish between these man-made features and natural features.

Reference Materials:

Criterion-Referenced Test: Maps Show the Earth Test Two

Directions:

1. Each child will receive an 11-item answer sheet. The student will answer each question by placing an "X" on either the stick-man for a man-made feature or the sun for a feature made by nature. The first item is a practice exercise to make sure all children are correctly following the directions.
2. The following verbal format will be followed for each item, including the practice item:
   A. The student will be told to put her/his finger on the number of the item. At the same time, the teacher will write the number on the chalkboard.
   B. Holding up a study print showing the feature, the teacher will instruct the children to place an "X" on the stick-man if the feature is made by man or on the sun if the feature is made by nature. The teacher should point to the feature on the study print and call it by name. The teacher can move about the room to make sure each child can clearly see the study print and monitor their performance.
3. The sequence of study prints and features will be the following:

(1) PRACTICE ITEM: Factory--Study Print 4	stick-man
(2) River-Study Print 1	sun
(3) School--Study Print 2	stick-man
(4) Railroad--Study Print 2	stick-man
(5) Birdge--Study Print 3	stick-man
(6) Forest--Study Print 4	sun
(7) Highway Interchange--Study Print 4	stick-man
(8) Church--Study Print 5	stick-man
(9) Mountains--Study Print 7	sun
(10) Lake--Study Print 9	sun
(11) Shopping Center--Study Print 11	stick-man

Holt Correlations:

MAPS SHOW the EARTH TEST TWO

	MAN-MADE	NATURAL FEATURES
1	🧍	☀
2	🧍	☀
3	🧍	☀
4	🧍	☀
5	🧍	☀
6	🧍	☀
7	🧍	☀
8	🧍	☀
9	🧍	☀
10	🧍	☀
11	🧍	☀

SECOND GRADE LESSON ONE: MAPS USE SYMBOLS TO SHOW WHAT'S ON EARTH

Required Materials:
1. Filmstrip and Cassette: Maps Use Symbols
2. Symbol Flash Cards

Behavioral Objectives:
1. The students will define maps symbols as pictures which stand for real things on maps.
2. The students will demonstrate an understanding of map symbols by reading a map using symbols rather than word labels.
3. The students will define legend and key for a map.

Wisconsin Design Study Skills Correlations:
1. B-1
2. C-1
3. C-3
4. D-1

Extension Activities:
1. Give students a list of words or pictures which illustrate words (e.g., mountains, grassland, lakes, rivers, etc.). Ask students to make up symbols for each word or word/picture. Think up symbols for the North and South Poles which relate to environment or animal life at each.
2. Hold up drawings, colors and patterns and ask students what these might serve as symbols for.
3. Have the students make up their own symbols for various map features. Then compare the pupils' symbols for the ones standardly used.
4. Have the pupils look at a map with a number of different symbols on it. Ask the students to group those which look like that which they symbolize and those which don't look like that which they symbolize.
5. Have students make their own sets of flash cards to practice learning the basic map symbols.
6. Give students a set of symbols and have them construct their own maps. Urge the students to place the symbols logically in relation to each other.
7. Ditto a variety of maps and have students circle symbols for each map that are the same using different colors for each symbol (e.g., railroads on all maps will be circled with black crayon). Have students list symbols that are different on different maps (e.g., cities on one map may be designated by a circle and one another by a square).
8. Make a set of posters for several symbols. Have the pupils bring pictures and put them on the appropriate poster for each symbol.

9. Provide pupils with copies of physical relief maps and sets of symbols representing physical features. Have the pupils place the symbols on the features which they represent.
10. Have students describe an area given nothing more than a map legend for the area.
11. Describe an area to the class. Have the pupils create a legend which would match the area. The legend should include a map title, list of symbols and perhaps a map scale.
12. Students create their own map to accompany a social studies or science unit. In creating this map, the pupils will construct their own legends for each map.
13. Assign the exercise immediately following this lesson.
14. Give students a group of road maps and have them make lists of the kinds of information revealed on each.
15. To increase the understanding of map symbols, primary grade children should have a variety of experiences pertaining to geographic concepts. Some of these geographic features can be observed directly in the environment close to the elementary school. Pictures, films, filmstrips and models can further expand these geographic concepts.
16. Have the students select a symbol and then construct a model of the symbol using any of a variety of means (e.g., clay).
17. Children can paste pictures of map symbols of room objects on a teacher-created map of the classroom. Alternatively, the students may draw in symbols for the objects on the maps. As an additional touch (and a lesson in orientation), they may write classmates' names on the desks.
18. Create a learning station on map symbols (See Godfrey, 1973).
19. After students describe where and how they went over the summer, have them create symbols to represent their mode of travel. These symbols can be placed on the U.S. wall map at the student's destination.
20. The teacher can take slides of various features to use in connection with the introduction of symbols for these features.
21. The class develops an illustrated glossary of symbols and features.
22. Duplicate a map with a standard key. Then have the pupils identify each symbol on the map by combining the name of another pupil in the room with the key name (e.g., Jones Bridge, Johnson Lake, etc.).
23. Give students a prepared map with a blank area for a legend. Have the students fill in the blank area based on the information on the map itself.
24. Pretend you have discovered a new land. Use symbols to show what the new land looks like. This could be structured by limiting the children to a restricted number of features. Have each child then describe in sequence according to his

map, what he would see if he traveled from one side of his map straight across to the other.

25. Use symbol flash cards to play Around the World.

26. GAME: SYMBOL BINGO
Materials: markers and symbol bingo cards
Procedure: On each bingo card are map symbols. A class caller draws a picture from a stack of pictures corresponding to the card symbols. As the caller draws a picture, he names it as well. Then the players scan their cards for symbols for the picture. The first person to get squares filled across, down, or diagonally wins.

27. Construct and use a self-correcting, battery-operated electric game board. When the child matches a picture with the symbol for the picture correctly, a circuit is completed and a light goes on on the board.

28. GAME: MATCH GAME
Materials: 12 black cards with pictures on each card and 12 orange cards with symbols for the above shown on them.
Procedure: Black cards are dealt face up and orange cards are stacked face down in the center of the group. Each player takes a turn picking an orange card from the stack and tries to match it with any of the black cards, either his or another's. The first one with no black cards left is declared the winner of the game.

29. GAME: BULLETIN BOARD MATCH
Words, symbols and pictures may be placed on a bulletin board in this arrangement:
Symbol Word Picture

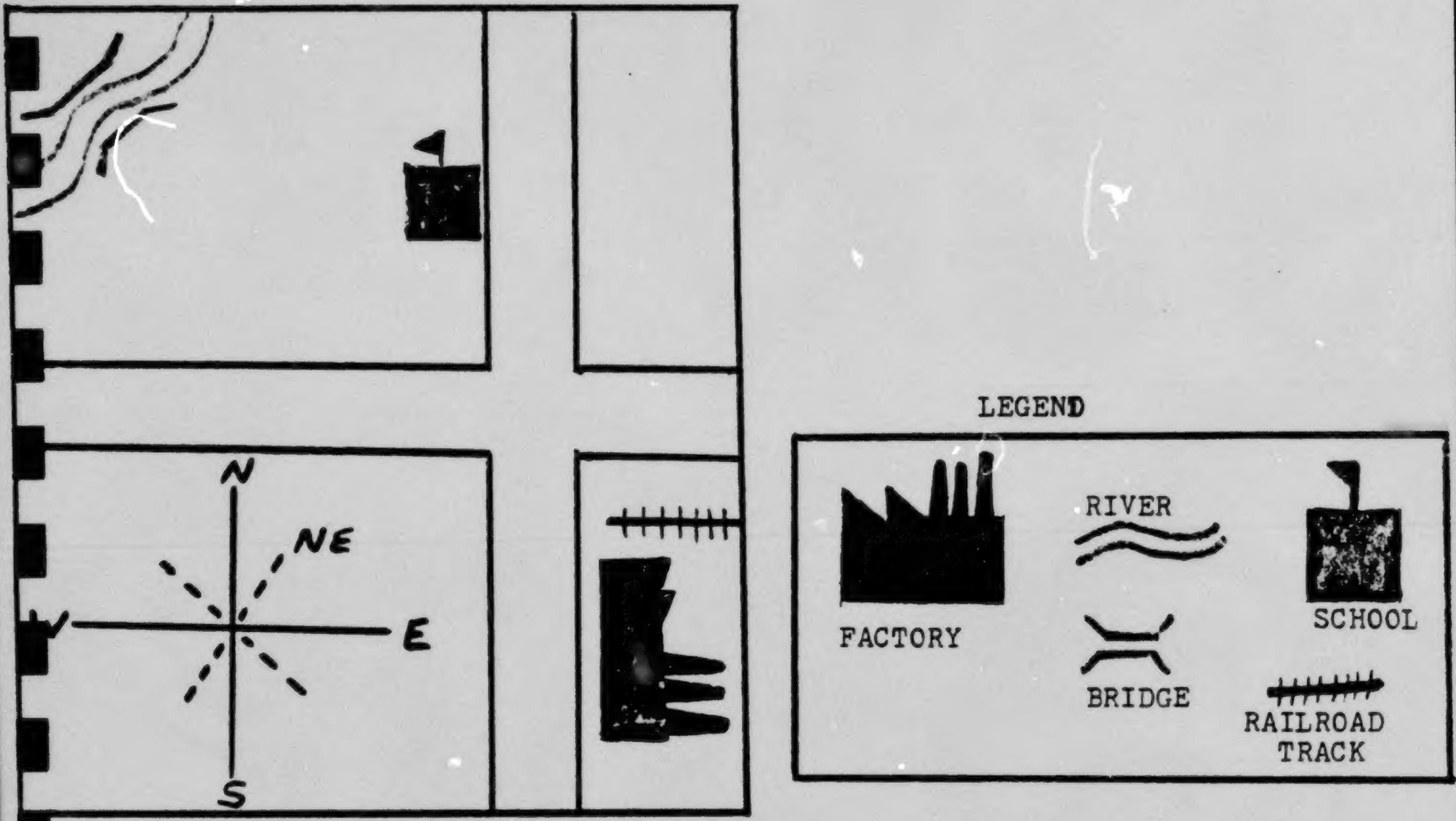
Place yarn and fasteners by each item in each column so children can practice matching. Be sure that there is a key provided in the corner.

30. GAME: GRAB BAG
Use two paper bags filled with slips of paper. One bag will have the names of symbols on the paper and the other bag will have the symbols themselves drawn on the paper. Divide the class into two teams. Symbols are passed out to each member of one team. The other team, one at a time, draws a word out of the bag and says the word aloud. If the person holding the symbol can hold it in the air within five seconds, the team holding symbols gains a point. If the wrong symbol is held up or if the time limit is exceeded, a point is scored by the team with word cards. (The teacher must monitor to be sure that the right word has been called.) To be sure that all children are watching and listening, the teacher may want to allow the children themselves to be the ones who must catch any mistakes made. After all words have been used, the teams can reverse their roles.

31. Use the symbol map of the Todd district which follows this lesson. Questions such as the following could be used:
   a. How many different symbols are shown on the map? (7)
   b. Name them. (bridge, school, cemetery, island, railroad, river--actually a creek--and church)
   c. How many of these features represented by symbols can you name? (e.g., Roosevelt Junior High)
   d. How many bridges are shown on the map? (2)
   e. How many hospitals are shown on the map? (0)
   f. Which feature represented by a symbol is closest to your home?
   g. Circle the island.
   h. Put an "X" on Todd School.

Reference Materials:

Holt Correlations:
2:2-17 & 18; 2-9; 2-11; 2-14;
3:3-1; 3-13; 7-4; 7-14 & 16; 8-6 & 7; 2-7; 3-9; 2-2; 4-1;
4:4-3; 7-6; 1-9 & 10; 8-15;
5:1-5; 1-2; 6-3; 5-12; 4-2; 4-11; 5-16
6: 5-6 & 7


N
NE
E
S
LEGEND
RIVER
FACTORY
SCHOOL
BRIDGE
RAILROAD TRACK

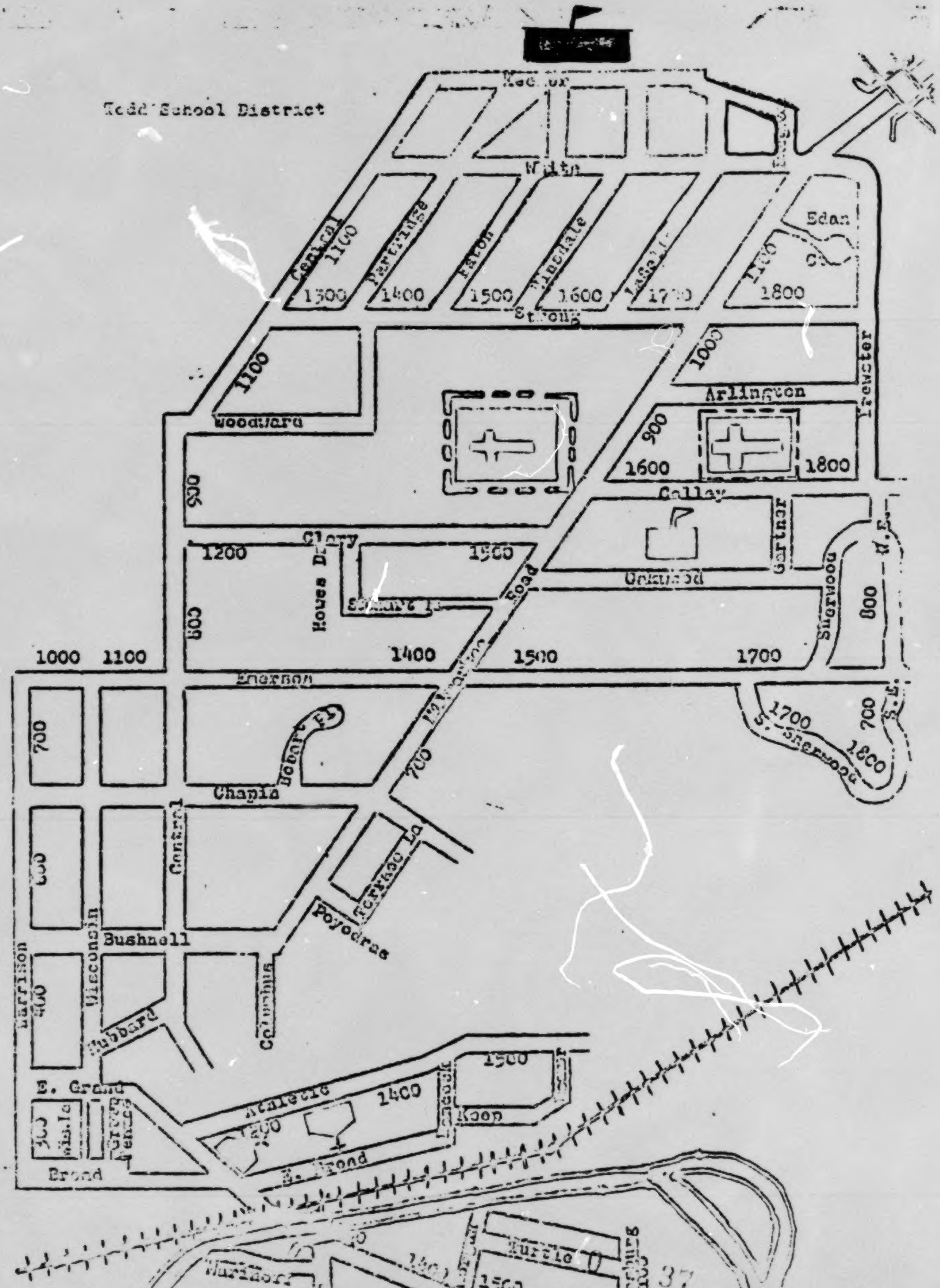
ANSWER THE FOLLOWING QUESTIONS USING THE MAP:

1. NAME THE SYMBOLS IN THE NORTHWEST CORNER:

   ______________________________ ______________________________

2. DRAW A LINE GOING EAST TO WEST IN THE MIDDLE OF THE HIGHWAY.
3. YOUR CLASS IS GOING ON A FIELD TRIP TO THE FACTORY. WHAT DIRECTION WILL YOUR CLASS WALK TO REACH THE FACTORY?
4. PUT A GREEN SQUARE IN THE NORTHEAST CORNER. THIS SYMBOL REPRESENTS A PARK.
5. YOUR CLASS WANTS TO HAVE A PICNIC IN THE PARK. WHAT DIRECTION WILL YOUR CLASS WALK TO REACH THE PARK?
6. TRUE OR FALSE? THE RAILROAD TRACK RUNS NORTH TO NORTHEAST.

Todd School District


Keeler
White
Central
1100
Partridge
Eaton
Hinsdale
LaSalle
1300
1400
1500
1600
1700
1800
Edan Ct.
Strong
1100
1000
Arlington
Brewster
Woodward
900
1600
1800
Galley
Gartner
N. E.
Oakwood
Glory
1200
1500
Howes Dr
Stewart Ct
Road
Sherwood
800
900
1000
1100
1400
1500
1700
Emerson
Milwaukee
Hobart Pl
700
Chapin
700
1700
S. Sherwood
1800
700
S. E.
Central
Norwood Ct
Poyodras
600
Harrison
Wisconsin
Bushnell
400
Hubbard
Columbus
1500
E. Grand
Athletic
1400
1400
Koon
300
Grove Avenue
Broad
E. Broad
Marihoff
Turtle
1400
1500
1600

SECOND GRADE LESSON TWO: MAP SYMBOLS STAND FOR NATURAL AND MAN-MADE THINGS

Required Materials:
1. Filmstrip and Cassette: Maps Use Symbols (optional review)
2. Study Prints 1 and 6
3. Study Print Labels 1 through 6
4. Workbook 14

Behavioral Objectives:
1. The students will demonstrate increased proficiency and independence in reading maps using symbols.
2. The students will demonstrate their ability to make use of the map key by using symbols that they have not been exposed to before.

Wisconsin Design Study Skills Correlations:
1. B-1
2. C-1
3. C-3
4. D-1

Extension Activities:
1. Almost all activities for Second Grade Lesson One can be easily adapted to Lesson Two.
2. The teacher may also be able to develop additional activities by modifying suggestions made for First Grade Lessons Three and Four on man-made and natural features.

Reference Materials:

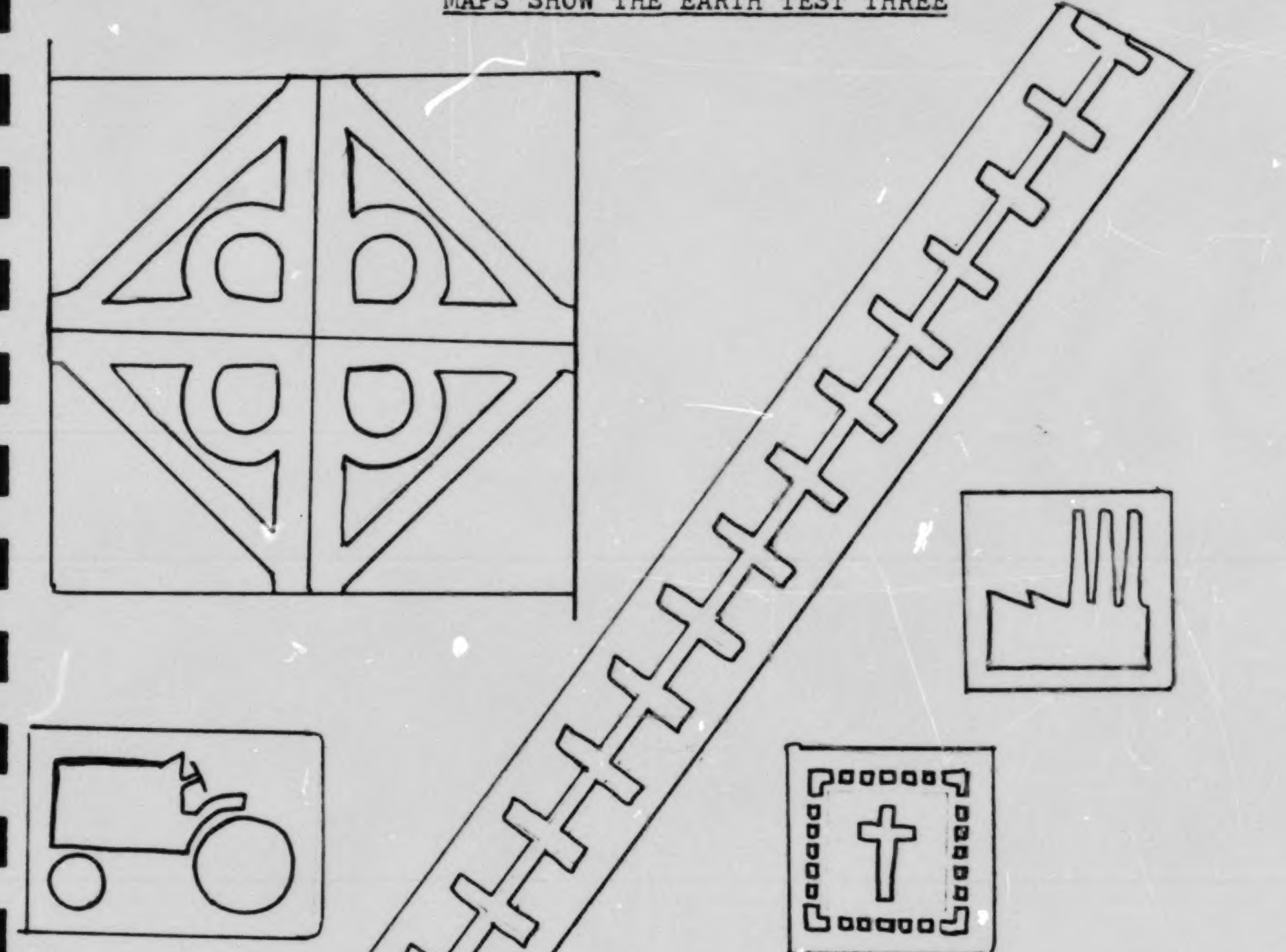
Criterion-Referenced Test: MAPS SHOW THE EARTH TEST THREE
Materials: Test Sheet and the eight standard crayons only
(blue, green, red, yellow, black, orange, white, and brown)

Procedure: Test sheets are distributed to each pupil. The teacher explains that the pupils are going to identify symbols by making marks as on the symbols. The first symbol will serve as an example.
1. Hold up your yellow crayon. Make a yellow X on the symbol for the highway interchange. Put down your yellow crayon when you are through. (Since this is a practice exercise, the teacher can ask for the correct answer and move about the room to determine whether all of the pupils are following the directions correctly.)
2. Hold up your yellow crayon. Make an "X" on the symbol for an airport. Put down your crayon if you are through.
3. Hold up your red crayon. Make an "X" on the symbol for a cemetery. Put down your red crayon if you are through.

4. Hold up your green crayon. Put an "X" on the symbol for a forest. Put down your crayon when you are through.
5. Hold up your black crayon. Put an "X" on the symbol for a factory. Put down your crayon when you are through.
6. Hold up your white crayon. Put an "X" on the symbol for a hospital. Put down your crayon when you are through.
7. Hold up your blue crayon. Put an "X" on the symbol for a railroad. Put down your crayon when you are through.
8. Hold up your brown crayon. Put an "X" on the symbol for a farm. Put down your brown crayon when you are through.
9. Hold up your orange crayon. Put an "X" on the symbol for a school. Put down your crayon when you are through.
10. Hold up your blue crayon. Circle the symbol for a church. Put down your blue crayon when you are through using it.
11. Hold up your black crayon. Draw a circle around the only symbol which represents something made almost entirely by nature.

Holt Correlations:
2: 3-10; 2-16
3: 2-15; 3-3;
4:
5: 7-7; 5-10,11, & 15; 4-7; 1-4

MAPS SHOW THE EARTH TEST THREE



SECOND GRADE LESSON THREE: MAPS AND THE EARTH'S ROTATION

Required Materials:
1. Filmstrip and Cassette: Maps Show Where
2. Workbook 15

Behavioral Objectives:
1. The child will make a distinction in definitions between up and down and north and south.
2. The child will be able to locate the North and South Poles
3. The child will identify the earth's rotation as the cause of day and night.

Wisconsin Design Study Skills Correlations:

Extension Activities:
1. This lesson may be related to a science unit on space.
2. The location of the North Star could also be discussed.
3. Use the classroom clock as a clue to the earth's rotation.
4. At the outset, only display maps on the horizontal to emphasize the distinction between up and down and north and south (See Klein, 1976).
5. Discuss how the amount of light in a room is dependent on the position of the windows in the room in relation to the sun.
6. To demonstrate the cause of day and night, the following procedure could be used:
    a. Darken the room, if feasible, to make the distinction between the light and dark halves of the globe more apparent.
    b. Have a child hold a flashlight in a stationary position to represent the sun. Direct the beam of light toward the equator.
    c. Note that one-half of the globe is lighted. Explain that this side is having day and the other side is having night.
    d. Rotate the globe slowly from west to east.
    e. Notice that a certain point (previously marked) is just coming into the light. Explain that it is sunrise for for that point. When that point is directly in line with the center of the beam of light (or when the sun is shining directly on it, it is noon. It is sunset for that point when it passes into the shadow. (e. is an option dependent on the teacher's subjective determination of how well the class is grasping the concepts to this point.)
7. To help pupil's visualize the idea of the North and South Poles serving as an axis for the earth, a pencil can be projected through a round piece of clay.

Reference Materials:

Criterion-Referenced Test: Maps Show the Earth Test Four

Materials: Test sheet in primary type; pencil
Procedure: The teacher will read the directions which also appear on the pupils' copies of the test so that they can read along. "There are 11 statements below. Some are true and some are false. Mark each true statement with an "X". Mark each false statement with an "O". We'll do the first one together."

__0__1. Without the moon, it would be dark all of the time.

(Following this example, the teacher can discuss the correct answer and check the pupils' test papers to be sure that all all completing them correctly.)

__X__2. As the earth turns, nighttime becomes daytime.

__0__3. The earth is always moving around the sun.

__X__4. Without the sun, it would be dark all of the time.

__0__5. The West Pole is located at the top of the globe.

__X__6. Up is away from the surface of the earth.

__0__7. The North Pole is located at the bottom of the globe.

__X__8. The sun is lighting up half of the earth at all times.

__0__9. All sides of the earth face the sun at night.

__0_10. Down is away from the surface of the earth.

Holt Correlations: 3-5-7

MAPS SHOW THE EARTH
TEST FOUR

____1. Without the moon, it would be dark all of the time.

____2. As the earth turns, nighttime becomes daytime.

____3. The earth is always moving around the sun.

____4. Without the sun, it would be dark all of the time.

____5. The West Pole is located at the top of the globe.

____6. Up is away from the surface of the earth.

____7. The North Pole is located at the bottom of the globe.

____8. The sun is lighting up half of the earth at all times.

____9. All sides of the earth face the sun at night.

____10. Down is away from the surface of the earth.

NAME ____________________________________

SECOND GRADE LESSON FOUR: MAPS GIVE DIRECTIONS

Required Materials:

1. Filmstrip and Cassette: Maps Show Where (optional review)
2. Workbook pages 18 and 19

Behavioral Objectives:

1. The student will be able to name the four main directions.
2. The student will identify the directions in which the sun rises and sets.
3. The student will demonstrate the ability to find the four main directions on a map.

Wisconsin Design Study Skills Correlations:

1. D-2

Extension Activities:

1. Finding directions: Discuss warm and cool or cold winds and where they normally come from. Choose a leader to call out directions such as, "Cold North Wind" or "Snow from the West". The class will face the direction that the leader calls. Change leaders after each three directions.
2. One day, the class could go outside before school, at noon, and after school to note the position of the sun and their shadows at each time.
3. At noon the students should face the direction of their shadow. That direction is north. If they raise their right arms, these arms are pointing east. If they raise their left arms, they are pointing to the west. The direction behind them is south.
4. Signs should be placed on classroom walls to represent the actual directions of those walls.
5. On the playground, students can use the sun and their shadows to make statements: "I am going south when I go toward the swings."
6. Walk around the playground. Let the children find the directions with a compass this time. Ask them how they might be able to find directions without a compass.
7. When the children come back to the classroom, the compass can be used again to determine directions inside the room. A directional key can be completed on the floor based on these findings.
8. For further ideas, the teacher is urged to examine the activities suggested for Third Grade Lesson Plans Three through Six. Many can be modified to fit a second grade situation.
9. Assign the exercise immediately following this lesson.

Reference Materials:

Criterion-Referenced Test: Maps Show the Earth Test Five
Materials: Test sheet; pencil
Procedure: After distributing the test sheets, the teacher will first instruct the pupils to insert the appropriate directions in the three remaining blanks (the direction south has already been provided as a key). The teacher can monitor pupil progress to be sure that the pupils are placing their answers in the correct place. The pupils may either write the whole word or the first letter of the directional word.

When the teacher has observed that all students have completed this first task, the teacher will tell the pupils to circle the direction where the sun first appears in the morning. As a sign that this has been done, the pupils are to turn over their test sheets at this point. The last three answers will be written on the back of the sheet.

On the back of the sheet, the pupils will answer the following three questions:

5. If you were flying toward the South Pole, what direction would you be headed? (South)
6. If you were watching the sun disappear at night, what direction would you be facing? (West)
7. If you were lost, what might you be able to use to head the right direction? (Any reasonable answer should be accepted. Examples are: compass, sun, shadow) Tell the pupils that picture answers will also be accepted.

Holt Correlations:
2: 2-21, 22 and 23

MAPS SHOW THE EARTH TEST FIVE

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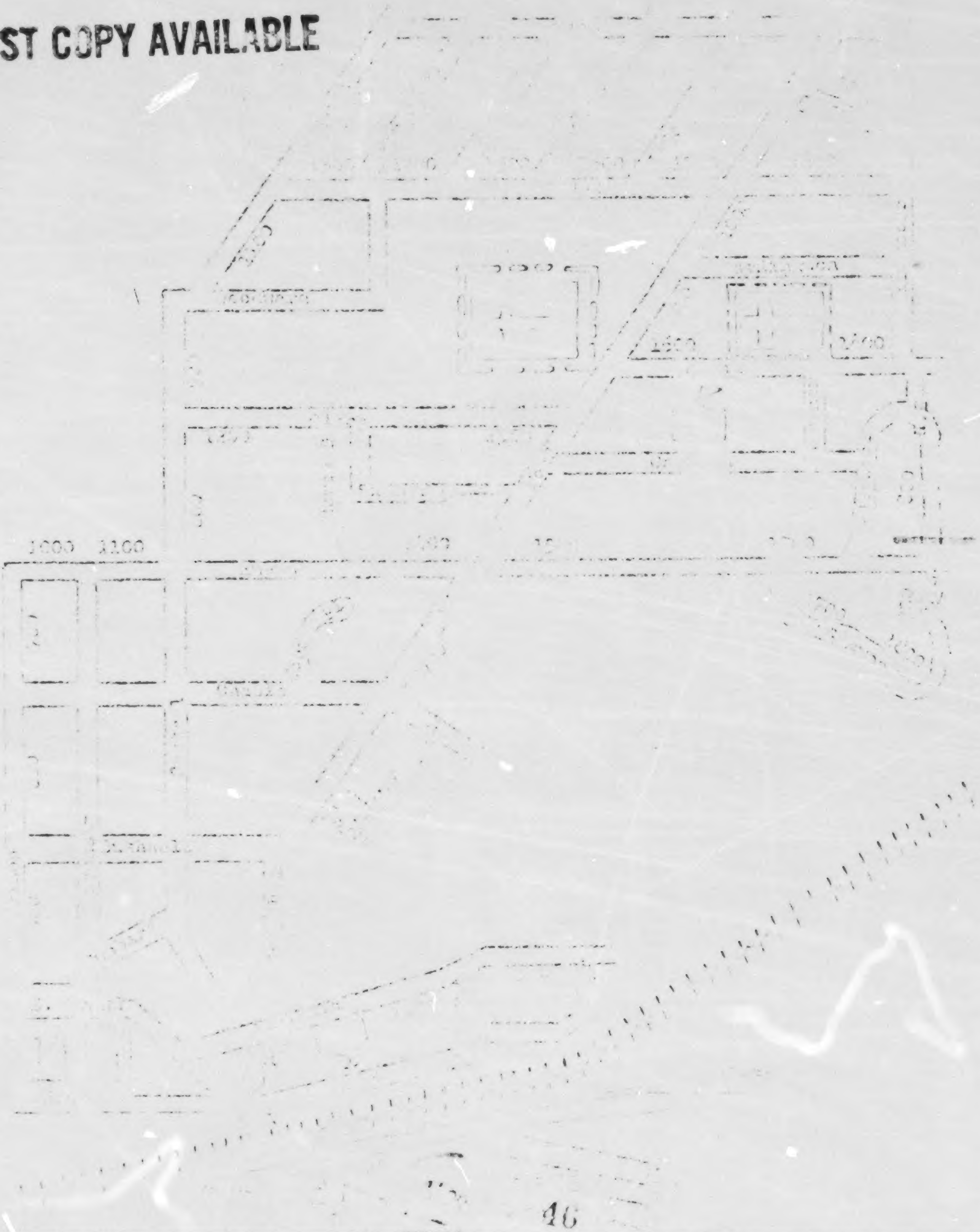
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Paste letters in the right boxes.

Name

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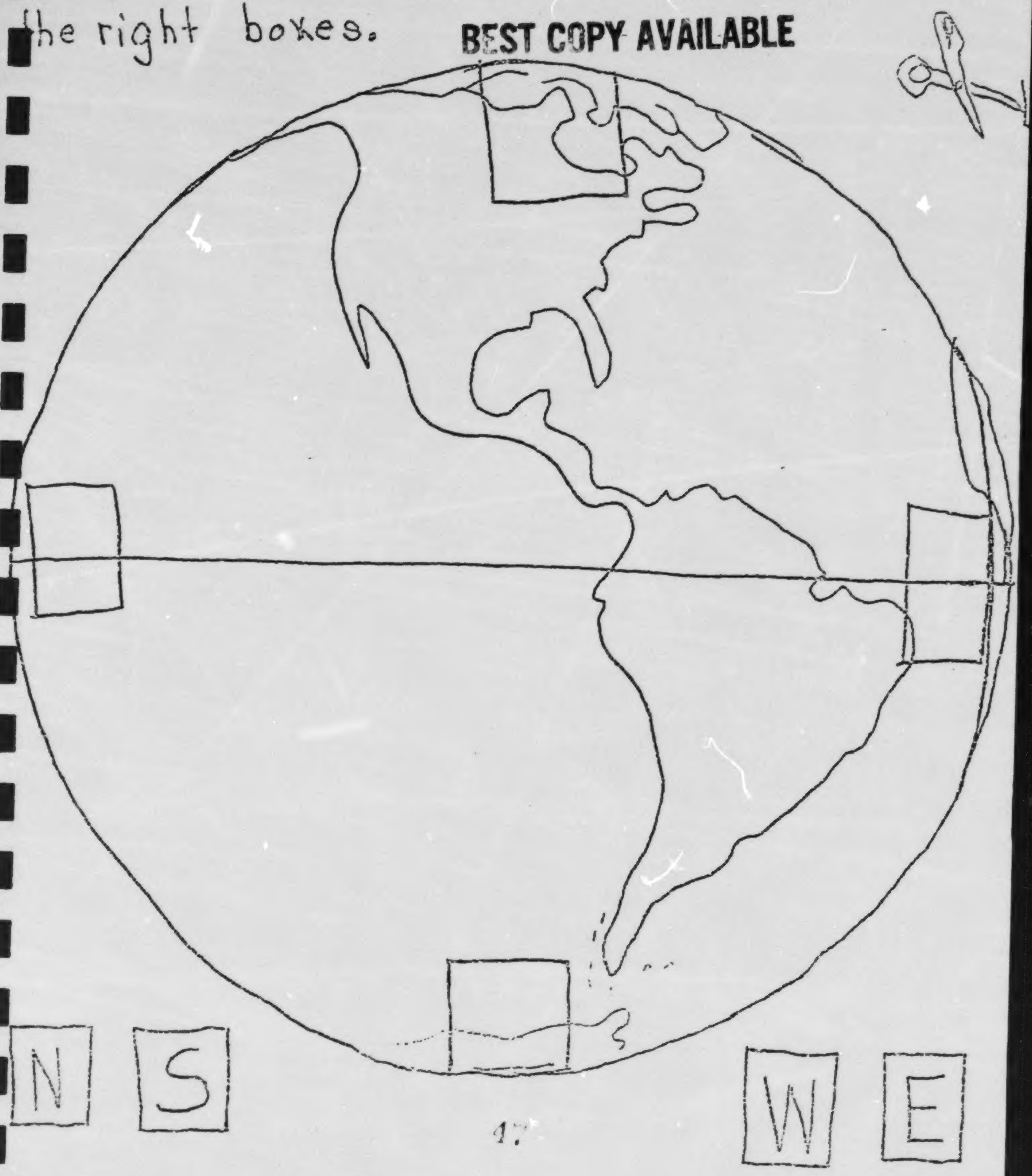

SECOND GRADE LESSON FIVE: MAPS GIVE OTHER DATA ABOUT OUR WORLD

Required Materials:
1. Workbook pages 16-17, 20-21, and 22-23
2. Large Floor Map

Behavioral Objectives:
1. The students will list various uses for maps and globes.
2. Students will use maps to get certain information.

Wisconsin Design Study Skills Correlations:

Extension Activities:
1. Have each child map the way to his own house. The Todd School District map which follows this lesson can be used as a guide.
2. The students could make a mural showing the ideal neighborhood, including specific areas for recreation, shopping and industry. The students could make a mural showing a future neighborhood or city.
3. Make a floor map. Then have the pupils add a third dimension using blocks, sand and branches, for example.
4. Read a story to the children. Have the students make a map illustrating the scene of the story or the events of the story.
5. Read a story to the children. Have them select from a group of maps the one that best illustrates the story.
6. Let the children speculate on ways that maps are needed. How would their lives be influenced if no maps existed?
7. Read a story to the children. Have them trace the route of the story's characters.
8. Start a bulletin board with the title: I Live in Many Places. Then let them tell where they live. Answers will likely include such things as: in a house, in Beloit, on a street, etc. Invite the pupils to illustrate where they live by bringing in pictures of: houses, cities (Beloit), streets, etc.
9. Ask the class, "How many ways can people be found?" Possible answers would be: area code, zip code, street name, house numbers, school, telephone, etc. Make a list of the answers on the blackboard. Then go down the list and ask how many of these ways could be shown on a map.
10. The students could map the school. Before doing so, the class should go outside to walk around the building, noting shapes, wings, and classrooms. The finished map could identify rooms by numbers or teachers' names.
11. If interest remains high, students could map the school grounds.

12. The children can make a large map of the school attendance area using butcher paper laid on the floor. Let the pupils cut out houses representing their homes. These can be numbered and placed in the proper sequence. Schools, shopping centers, and other distinguishing landmarks can be noted.
13. Using the map made above, discuss the safest routes from their homes to school, friends' homes, etc.
14. As a prelude to making the map described in 12., the class can go on a walking tour of the neighborhood, including stops at each of the children's homes. The students should note street signs and the number of blocks being traveled. Once at each child's home, the house number can be noted and a photograph taken with the child in his/her doorway. Back in the classroom, the developed pictures can subsequently be attached to the appropriate spots on the district map.
15. The pupils can record on a large outline map of the state a place that they visited (e.g., a farm). Students could create symbols for these spots.
16. The pupils can record on a large outline map of the U.S. where they visited. Colored yarn can be fastened to the map to show their trip routes.
17. Children can bring a variety of maps to class to share. The teacher should direct attention to the title of each map as an indication of the purpose of the map.
18. Children can create and interpret their own maps (See Marine, 1968).
19. The teacher is referred to the following lessons for additional ideas: Kindergarten Lesson One, First Grade Lessons One and Two, and Third Grade Lesson Two.

Reference Materials:

Holt Correlations: 2-3-19; 4-2-27; 4-8-16 and 17; 6-1-1

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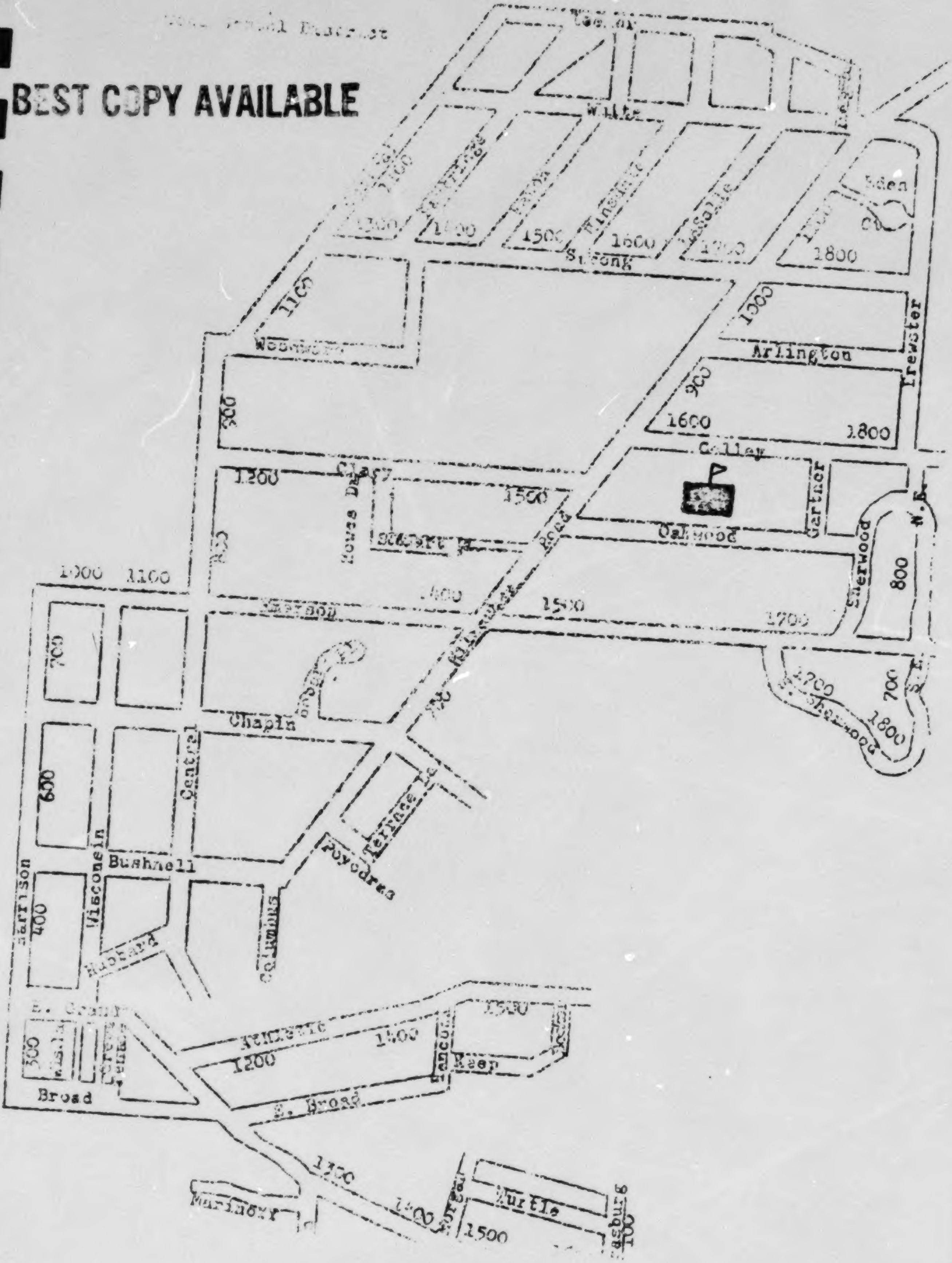
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THIRD GRADE LESSON ONE: WHAT IS A GLOBE?

Required Materials:
1. Tape #1
2. 12 inch radiness globe
3. Paper and Pencil

Behavioral Objectives:
1. Students will define a globe as a model of the earth.
2. Students will differentiate between land and water on a globe.
3. Students recognize on a globe the printed names of major water bodies, continents, countries, and cities.
4. Students will master vocabulary words of continent, ocean, sphere, globe, and model.

Wisconsin Design Study Skills Correlations:
1. D-2

Extension Activities:
1. News events have more impact if their locations are known. Children could share the news by also indicating on a globe where world news events occurred in relation to where they live. The group could discuss whether the happening is apt to touch their lives--standard of living, ability to travel, etc.
2. All countries studied in social studies units should be located on a globe.
3. Pupils can trace the migration of such international travelers as the Monarch butterfly.
4. Pupils can locate the origins of foreign stamps on a globe.
5. Pupils can correspond with other children in other nations as pen pals. As pupils receive responses to their letters, globes can be used to study the origins of the responses. In the correspondence, children can pose questions about the geography of the other individual's area.
6. In recognition of the times, children can be assigned the following task: Based on their evening's television viewing, they should all come to class the next day with the name of a place that they do not know. This place can then be found on the globe.
7. Children can locate the place where stories about children in other lands take place.
8. Ask students: "If you wanted to discover the shape of the earth, how would you do it?" You can tell the story of the discovery of the earth's roundness. Show photographs from space illustrating the earth's roundness.

9. Using various maps showing land and water masses of different sizes, ask students to identify the land masses with a brown color and the water masses with a blue color.
10. Students are divided into small groups and are given several maps (different size or proportions or different amounts of detail shown). Within their groups, they work together to spot the water masses and the land masses. On the same maps they put an X on bodies of water and land masses a long way off from North America and an O on land and water masses close to North America.
11. Look at pictures from space. What features can you spot?
12. Measure the globe with a 40" string to show that the distance around is the same in every direction. Measure in many different places.
13. Try rolling the globe to see how easily it rolls in any direction. Explain that this is because the surface of the globe is curved quite uniformly and this shape is a sphere. Then try rolling an egg and an apple and note the difference.
14. Tell the children that if they were to walk around the earth it would take them 2½ years if they walked at a normal pace of 2½ miles an hour both day and night. Ask them to find the distance around the earth by consulting encyclopedias or books available in the room or IMC.
15. To discover that the globe is really round, darken the room, use a flashlight or projector and direct it at the globe. Direct the light source from many directions and notice that the shadow will always be round no matter what position the globe is in. Ask: "If you were on the moon, how would the earth appear to you?"
16. To understand why blue is used for water and green and/or brown is used for land on most globes, bring in a color picture showing an area of both water and land.
17. Use a 22' graphic project globe to count and identify the continents and oceans. These can be appropriately labeled on the project globe.
18. These vocabulary words can be added to the weekly spelling list: continent, ocean, sphere, globe.
19. GAME: A Is for ?
    Materials: Each class member receives a globe (or one globe per pair of children); each person will also need a paper and pencil.
    Procedure: Within a given time limit, each player finds on the globe as many names as possible that begin with a certain letter. The person with the largest correct list at the end of the time limit wins.
    Variation: The student must also identify the name as an ocean, continent, country, etc.

20. Have the students make two sets of flash cards. On the one set, the vocabulary words from this lesson are written. On the other set, definitions for these words are written. The cards can then be used in games or individual matching practice. Provide a key for person to engage in self-correction.
21. Pretend that you are out in a spaceship as an astronaut and you are orbiting the earth. Tell what kinds of things you see. This can be done as a story writing exercise with illustrations.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 1

Holt Correlations:
2: 2-15;
1: October 1; January 6 & 9; April 2 & 7; June 1, 5 & 7

Name ______________________________

Date ______________________________

WHERE AND WHY

TEST FOR CASSETTE 1

What Is a Globe?

Required materials: 12" Readiness Globe

Use the globe to answer the questions below. Write your answers in the large blanks.

1. A toy car is a model of a real car. A globe is also a model. A globe is a model of the___.

   world or earth

2. What color on the globe is used to show water?

   blue

3. Name five continents.

   North America,
   South America,
   Africa, Europe,
   Asia, Australia,
   Antarctica

4. Name three oceans.

   Atlantic Ocean,
   Pacific Ocean,
   Indian Ocean, Arctic Ocean

5. Find South America. Name four countries in South America.

   Colombia, Venezuela,
   Brazil, Argentina,
   Ecuador, Peru,
   Chile, etc.

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THIRD GRADE LESSON TWO: WHAT IS A MAP?

Required Materials:
1. Tape #2
2. 12 inch readiness globes
3. Readiness Wall Map of USA, markable
4. Map Symbols and Geographic Concepts Charts #15 with plastic cover
5. Nyco Marker

Behavioral Objectives:
1. Students will define a map as a special drawing of the earth or part of the earth.
2. Students will identify land and water areas and coastlines on a map.
3. Students recognize on a map of the United States, the printed names of major water bodies, states, and cities.
4. Students become familiar with meanings of the words: map, coastline, key, symbol, and legend.

Wisconsin Design Study Skills Correlations:
1. D-1

Extension Activities:
1. The class can develop a classroom exhibit of maps found in current newspapers and periodicals and compare them with conventional maps.
2. Provide students with a wide variety of maps which all include the local community somewhere. Have the pupils find the community to whatever degree of accuracy possible on each map.
3. Have students identify different parts of a map.
4. Compare a map and a globe. What are the differences between the two? What are the advantages or disadvantages of each?
5. Paste copies of old maps on cardboard. Cut the resulting cardboard copies into puzzle shapes. These can becomes spare time activities.
6. Using a procedure similar to 5., cut out around geographic entities (e.g., states or countries or continents) only for practice in recognizing specific shapes.
7. Using a series of outlines of political entities (e.g, states, countries, or continents), have students write down their names as they are shown to the class.
8. Have students place an X on places that they have visited on either a state or United States map.
9. Construct a simple map of the school. Compare to a previously prepared map of the school building. If available, also show blueprints originally used by the school.

10. Locate countries near large bodies of water. How is their location influenced by this location? How might their economies be influenced by this location?
11. If a vacation period is approaching, have students map their expected vacation routes. The trip can be potentially more entertaining and educational as a result. Have the child search maps for geographical or historical points of interest along the expected route.
12. Routes to homes of relatives or friends elsewhere in the community, state or nation can be traced on city, state, or national maps
13. To correlate a unit on bus safety with maps, invite the bus driver or router to come to the class to discuss how routes are created as well as why bus safety is so important.
14. On a bulletin board map, let pupils pin up postmarks from letters sent by relative living in other cities or states.
15. At the outset of the school year or after a vacation period, children can tell about their trips and use colored yarn to show the route followed.
16. As an initial experience in map-making, take pupils to an intersection near the school and simply instruct them to draw a map for everything that they can see. This can lead back in the classroom to which maps made were the most effective and why.
17. Give students a map with numerous symbols, but no legend. Ask them questions which will lead them toward the need for a legend to derive meaning from the map. Then have the pupils construct a probable legend for the map.
18. The same type of inquiry approach described in 17. could be used for the maps made in 16. if students are unsure what the meanings are of the various symbols used by their classmates.
19. Involve parents by providing a list of activities at home that can involve the children in map reading (e.g., helping to plan a vacation, examining newspaper maps together, pointing out geographic features while on trips, etc.)
20. Pupils can bring to school labels from canned food, empty cereal and soap boxes and other products. Under teacher guidance, they can study where these products were manufactured and/or distributed. As each product is discussed relative to the place where it was manufactured, pupils can locate these places on maps. Reasons for the location of these specific manufacturing or distributing locations can be discussed.
21. Show the travels of various U.S. or world explorers on U.S. or world maps.
22. Include the following terms on weekly spelling lists: legend, coastline, symbol, and key.

23. Pupils can develop map understandings through a current affairs program. A bulletin board display can focus attention on an attractive commercial or student-made map. Clippings of national and international news can be placed below the map and connected to the places named with different colors of yarn.
24. Pupils can correspond with friends and relatives living in distance places. The places where these friends and relatives live can be located on the map and distances computed. The correspondences can be used to derive geographic information about the other areas.
25. Pupils can create and interpret their own imaginary maps (See Marine, 1968).
26. Make an imaginary treasure map with previously unknown symbols. Provide a legend. See who finds the treasure. Discuss her/his strategy. (For a list of real treasure maps, see Ladd, 1971.)
27. Have students write out a list of clear directions using, number of blocks, street names, main directions, etc. explaining how they get from their homes to the school. Then follow their prescribed routes on a large outline map of the school district to see how accurate these directions were.
28. Ditto off a classroom map. Let each child draw a route to a hidden eraser. Have the children take turns actually hiding the eraser while the prospective "finder" is out of the room. The "finder" will then use the other child's map to try to find the eraser. Both are winners if it is found since the finding requires a good map maker and map reader.
29. Provide a variety of maps so that students can explore many different types of legends. How are they all alike? In what ways are they most commonly different?
30. Use the vocabulary learned to this date to play a riddle game. The student asks, "Who am I?" S/He follows this with one or more hints, "I am the largest body of water on earth." If the students all have maps at their desks, the riddles can be more specific, "I am the largest continent on the earth. Who am I?"
31. Bring in a large picture or drawing of an area such as a downtown section or a residential area. Identify buildings and other objects seen in the picture or drawing. Make up symbols for each of these objects. Then draw a map of the picture or drawing.
32. Mark all places mentioned in the third grade social studies text on a map.
33. Research the way in which maps have changed over time. This can involve changes in their production or changes in their content based on explorations.

34. Give each pupil an outline of an area such as the United States with only the state boundaries shown. Place numbers on the sheet in various places that will correlate with a list of cities, rivers, lakes, state names, etc. that are written on the board. Allow each pupil ample time to refer to various maps and to write each name after, or near, the correct number. After some time, stop the pupils and have them check their own work with the teacher's help. The person having a perfect paper can assist other pupils.

35. Take a walk around the school grounds pointing out and identifying the main four directions. Make a legend which would be appropriate for the map and let the students make maps of the school grounds.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 2

Holt Correlations:
2-2-19
3: 2-1; 3-14; 2-16; 5-9;
4: 1-1
5: 3- 6 & 7: 5-13 & 14; 8-3; 10-7, 9 and 10; 3-1
6: 1-4; 2-17, 18 and 19

Name________________________________

Date________________________________

WHERE AND WHY

TEST FOR CASSETTE 2

What Is a Map?

Required materials: Readiness Wall Map of U.S.

Choose the word or phrase that makes the sentence correct. Write the letter of that word or phrase in the blank.

1. A map is a

   (a) photograph of the earth
   (b) special drawing of the earth
   (c) painting of trees, hills, and lakes

   b

2. On a map, a line is formed where ocean and land meet. This line is called

   (a) the equator
   (b) a beach
   (c) a coastline

   c

Use the map of the United States to answer the questions below. Write your answers in the blanks.

3. What color on the map is used to show water?

   blue

4. Find the Atlantic Ocean. Name three states that touch the Atlantic Ocean.

   Maine, N.H., Mass., R.I.,
   N.Y., N.J., Del., Md., Va.,
   N.C., S.C., Ga., Fla.

5. Find the state of Nebraska, near the middle of the map. Name two cities in Nebraska.

   Omaha
   Lincoln

6. Find the state of Missouri, near Nebraska. Name the lake shown in Missouri.

   Lake of the Ozarks

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THIRD GRADE LESSON THREE: FOUR MAIN DIRECTIONS

Required Materials:
1. Tape #3
2. Paper and Pencil

Behavioral Objectives:
1. Students will name the four main directions: north, south east and west.
2. Given a simple compass rose with one of four directions labeled, students will correctly label the other three directions.

Wisconsin Design Study Skills Correlations:
1. D-2

Extension Activities:
1. Make a poster for each direction relative to Beloit out of a large tagboard. Let the children bring in pictures or postcards of places that they have been to in these four directions.
2. Have students list all things known to them that are to the north. Put this list on the blackboard. Do the same for the other directions.
3. Place direction labels on the various walls of the classroom to help remind children of the cardinals directions.
4. Remind pupils that the sun first appears in the east and disappears in the west.
5. While on field trips, children should be given practice in noting directions, observing especially the directions of streets and roads.
6. Make sure pupils have practice in determining the other three directions when given a fourth. This fourth should be north no more often than any other direction.
7. Using a Wisconsin highway map, have students list roads running north-south, east-west, or a combination.
8. Using a Wisconsin highway map, have students indicate a city which they would like to visit. Have them then describe the route to reach this place by saying which roads and which directions would be followed. For example, to reach Janesville, take highway 51 north.
9. Have four children stand in front of the room. Those in their desks still take turns telling a direction for the four to turn. If one of the four misses, the person who gave the direction replaces the person who missed.
10. Use a picture map with lots of objects in it (e.g., the layout of a farm). Having the students pretend that they are walking through the area, ask them to identify which objects are to their east, to their north, etc. Then go outside and do the

same on the playground or in the neighborhood.

11. Create a treasure map that depends heavily on using the four main directions. This can also be a flat map such that the pupil who finds the city where the treasure is hidden is the winner.
12. Obtain a magnet compass. Hold the compass so that the needle points to the north. Ask pupils what direction their homes are from the school.
13. With a wall map pulled down, read the students a story which describes the movement of a character from a well-known location (e.g., Beloit). The story will be filled with reference to the direction, but no names will be included. Warn the pupils to concentrate on directional words and picture the movement occurring on the wall map. See how close pupils can come to the final location in the created story.
14. Talk about finding directions at night. Explain that the best way is to look for the North Star. First find the constellation called the Big Dipper which has four stars that make up a large cup and three stars that make up a handle. The two stars of the cup farthest from the handle point to the North Star. The direction of north is on the earth just beneath the North Star.
15. Take the class outside and talk about one direction at a time. Ask children to tell you what they see facing north, then south, etc. Locate special features that are in the area and a particular direction from the school. State other well-known places and see if the children can guess the correct general direction. For example, Watson's is what direction from Todd School?
16. Talk about how to tell direction without a compass. Do an experiment with a flashlight and a tall object. Help the children remember that the sun rises in the east and sets in the west. Label a table with the directions east and west at opposite sides. Then darken the room and set the tall object in the center of the table. Make the flashlight move overhead to noon and then over to the west. All during the demonstration emphasize what direction the shadow is pointing. The children should find that early in the morning our shadow points west, at noon it is very short but does point north and in the late evening shadows point east. Now the children are prepare to go outside at noon and prove that all of this is true. (Caution: The children should be reminded that during Daylight Savings Time, 1:00 P.M. would replace noon.)
17. Following along on a city map, prepare an imaginary bus trip around the city. Have the children draw the route. The directions should be in terms of directions and number of blocks only from a common starting point. See how well the

pupils are able to follow the route. Special symbols may be added if desired, such as a star for bus stops.

18. Using the Todd District map which immediately follows this lesson, have all pupils place their homes on the map. Then they can be asked a variety of questions dealing with the directional relationship of their homes to the school, key streets, their friends' homes, etc.

19. Using the Todd District map which includes symbols, students can be asked questions such as the following:
    a. The two cemeteries are east and west or north and south of each other?
    b. Name ten streets that run north-south?
    c. Name ten streets that run east-west?
    d. Which street is immediately to the east of Todd School?
    e. Name five streets south of the railroad. (Gartner)
    f. What geographic features are to the east of Turtle Street?

20. Using the Wisconsin map following this lesson, ask such questions as these:
    a. What city is farthest to the north? (Superior)
    b. What city is farthest to the west? (Superior)
    c. Name a city to the west of Beloit. (Dubuque is one)
    d. Which Wisconsin city on the map is farthest to the south?
    e. Name three cities south of Sheboygan.
    f. What city is west of Wausau? (Eau Claire is one)

    Caution: In dealing with the cardinal directions, be sure to allow leeway. That is, locations need not be directly north, south, east or west of an area to be a correct answer.

21. Using the city map following this lesson, ask such questions as:
    a. Is the Riverside Lagoon on the east or west bank of the Rock River?
    b. What industry is south of the Beloit Plaza? (Fairbanks-Morse and Company)
    c. Is the Eastlawn Cemetery north, south, east or west of Colley Road?
    d. Is Hancock field north or south of the railroad tracks?
    e. What street is immediately to the west of Strong Park? (Partridge)
    f. How much of Beloit is south of the state line: $\frac{1}{4}$, $\frac{1}{2}$, all, or none?

22. Scan Third Grade Lessons Four through Six for other ideas for activities on directions. Also refresh pupil skills by reviewing activities from Second Grade Lesson Four.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 3

Holt Correlations: See Second Grade Lesson Four

Name ________________________________

Date ________________________________

Required materials: none

WHERE AND WHY

TEST FOR CASSETTE 3

Four Main Directions

Wherever you go, you travel in a direction. The four most important directions are called the *main* directions, or *cardinal* directions.

1. Name the four main directions.

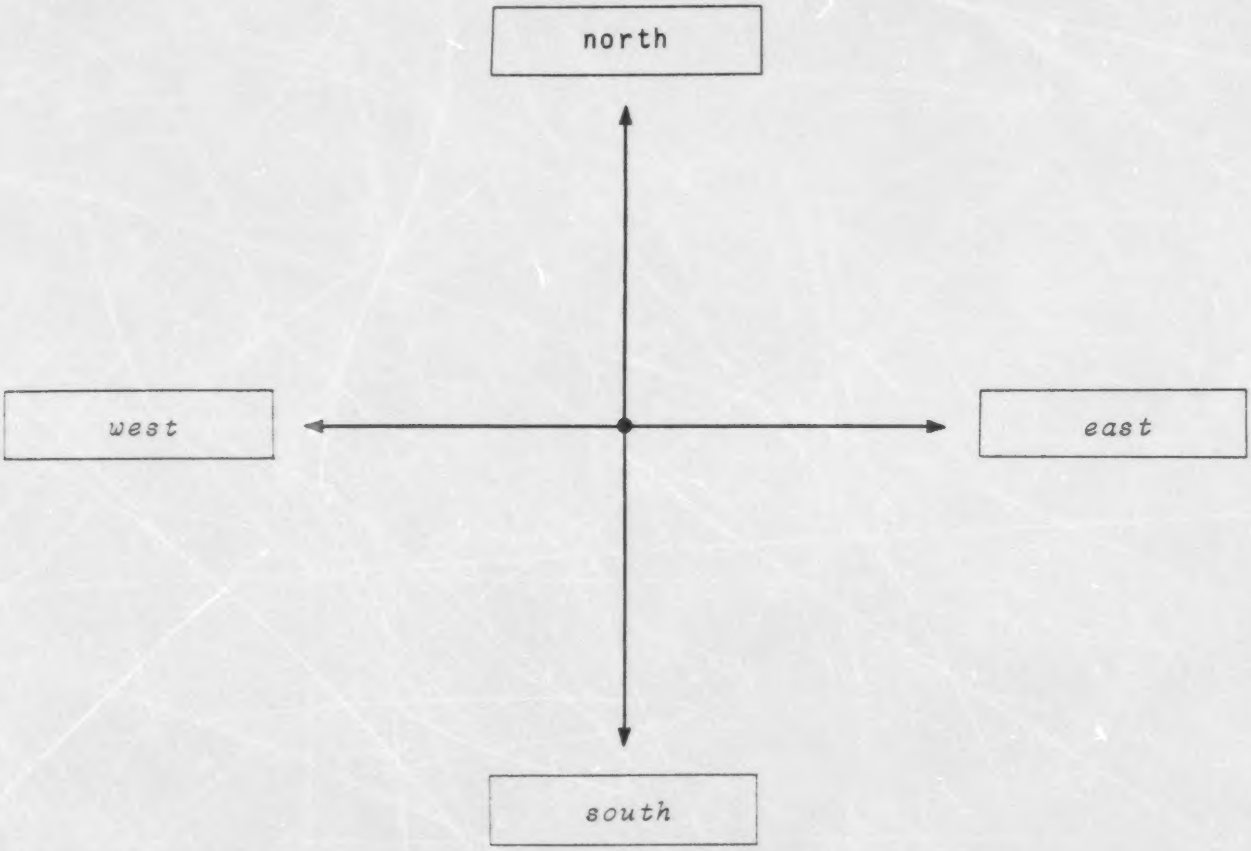
north

south

east

west

2. Write the names of the main directions in the boxes below. North is already shown. What direction is opposite north? What direction is to the right of north? To the left of north?



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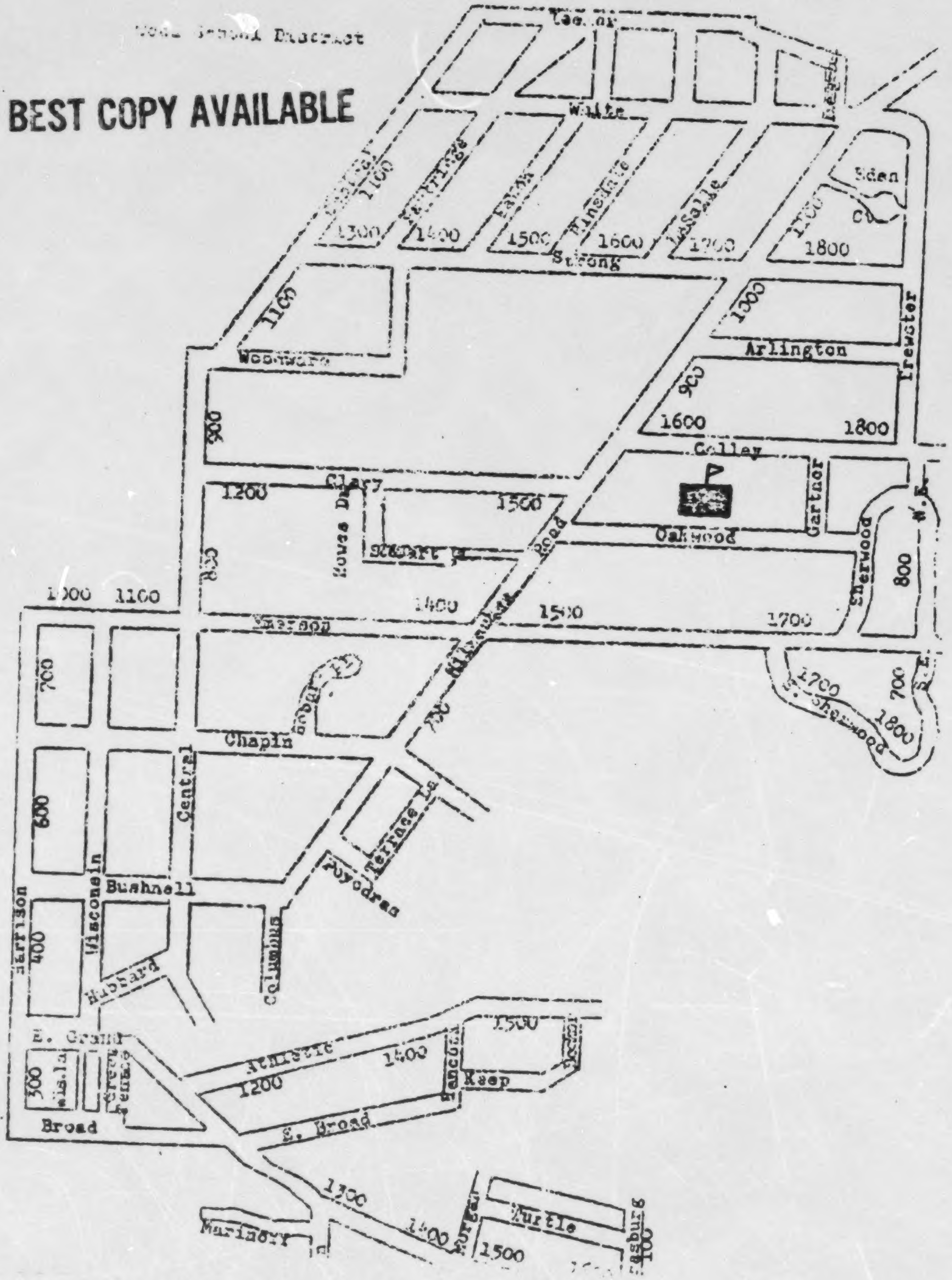
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Todd School District

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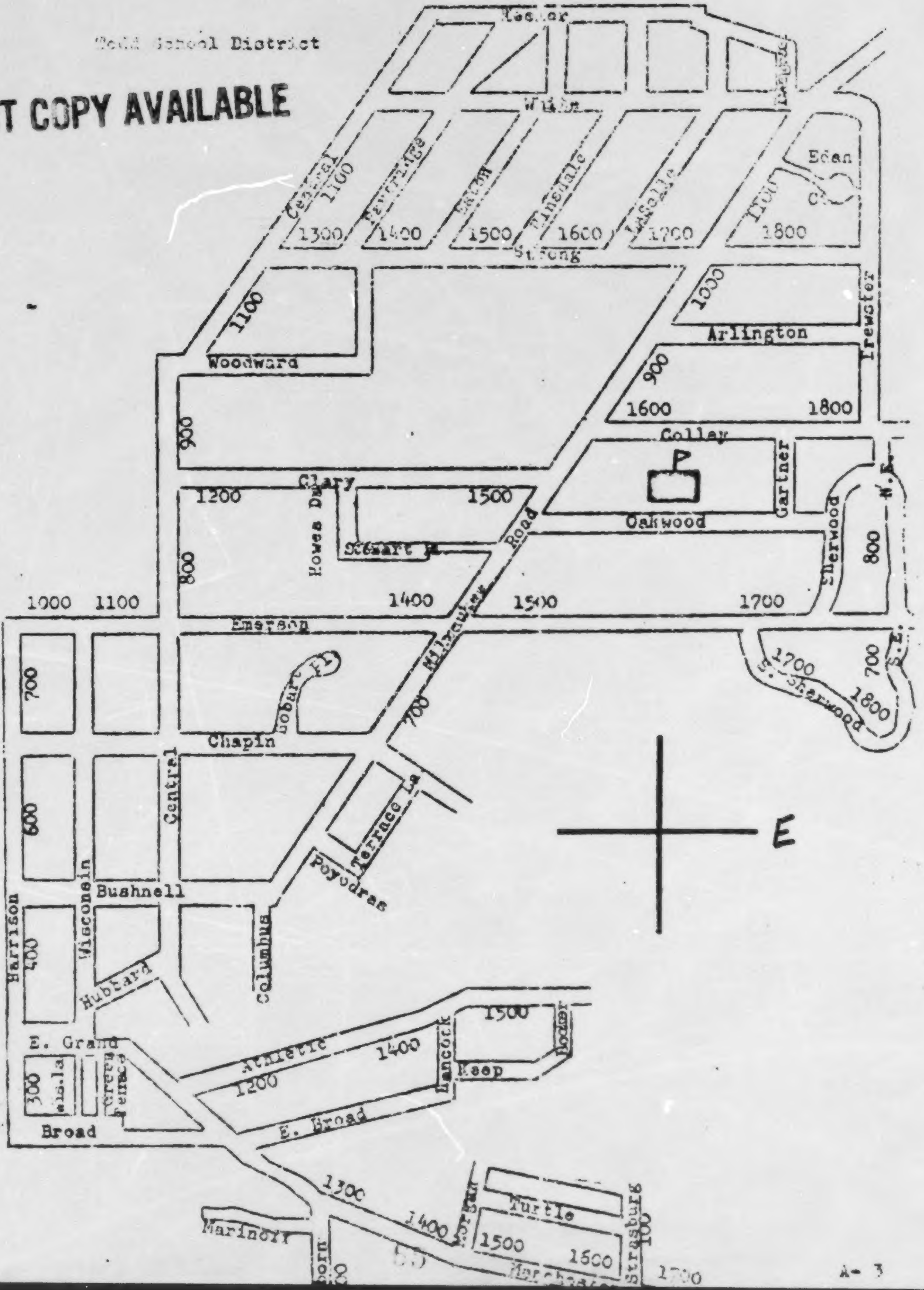
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BELOIT
POSTAL ZIP CODES

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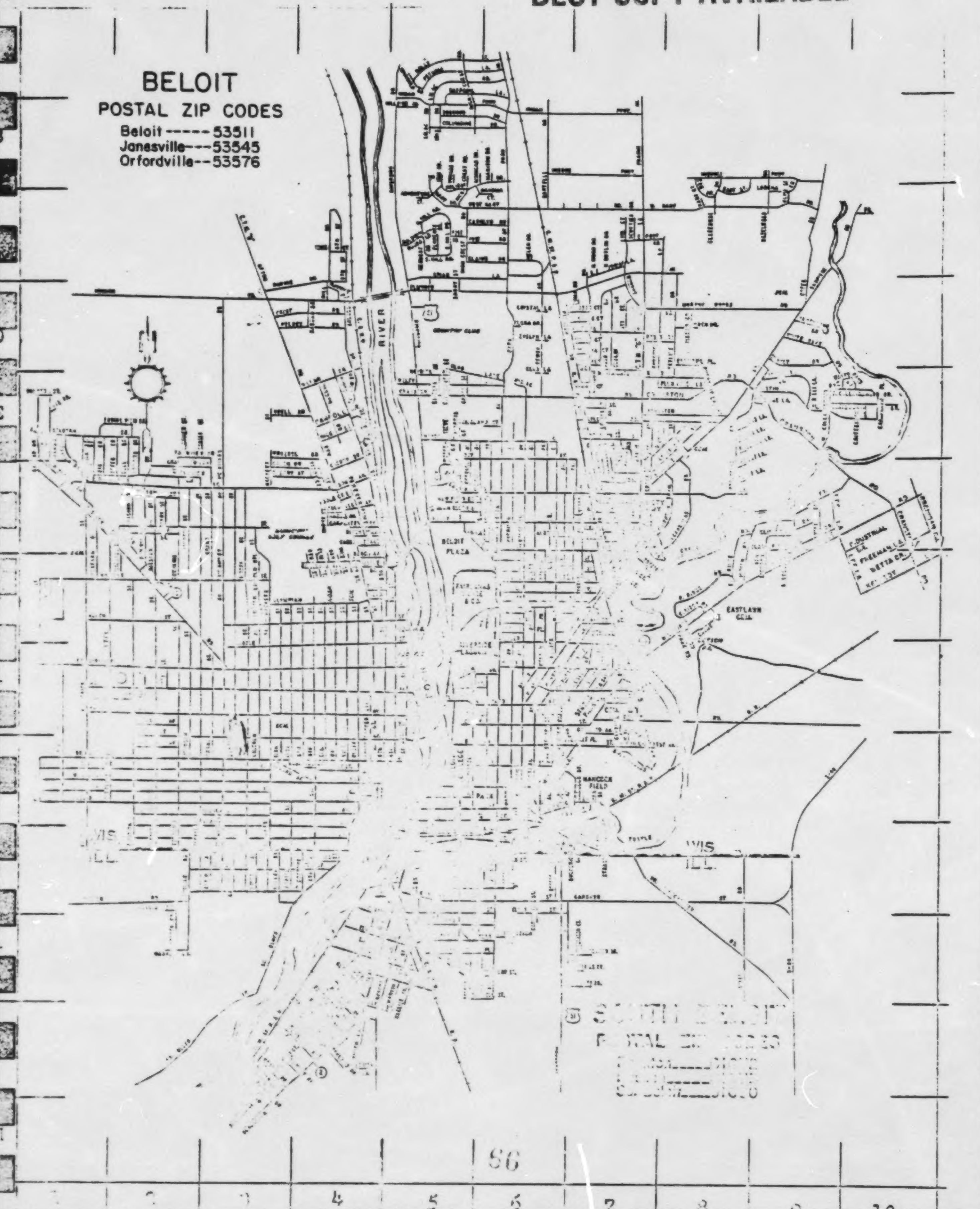
Janesville---53545
Orfordville--53576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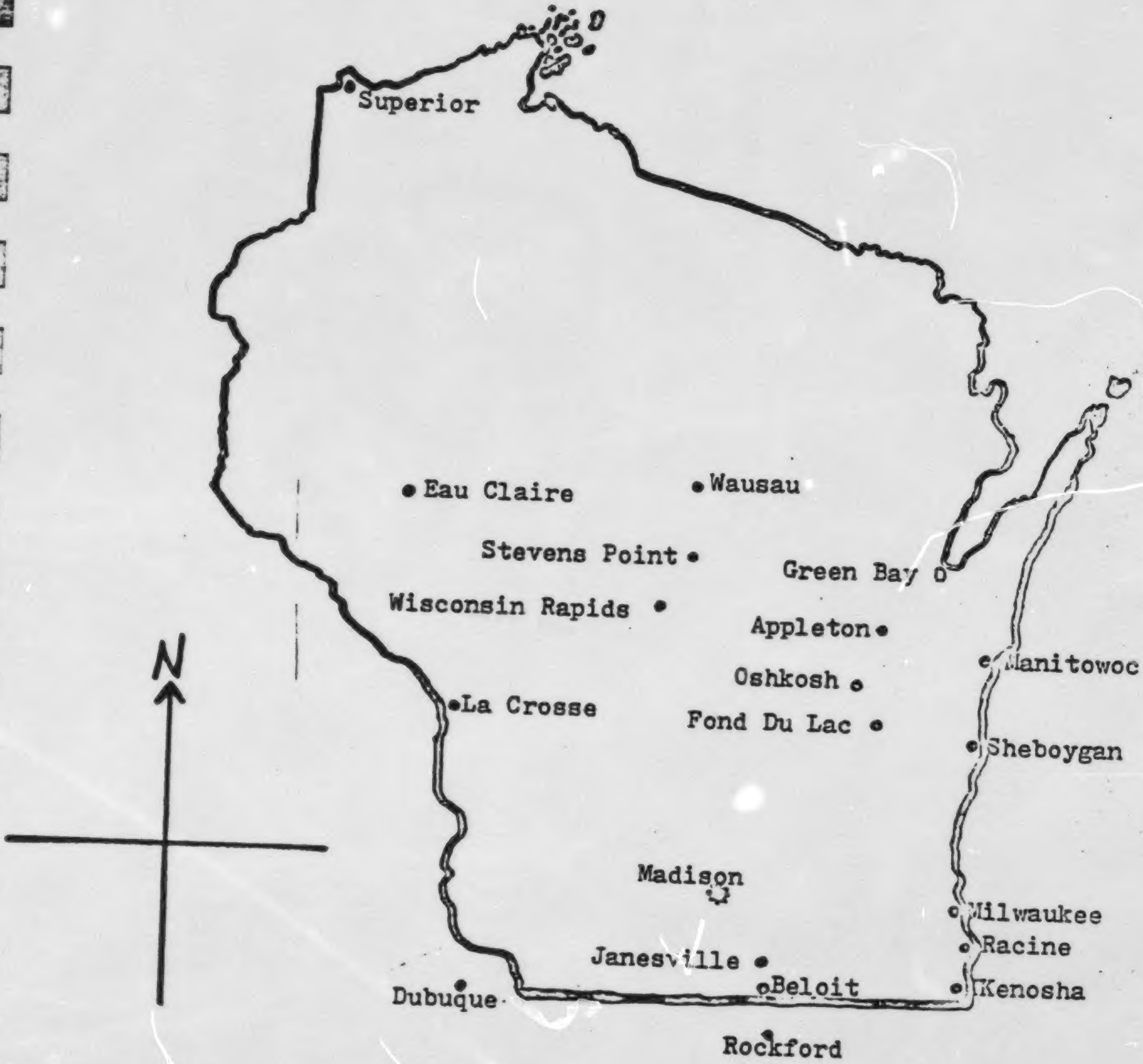
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Appleton
Manitowoc
Oshkosh
La Crosse
Fond Du Lac
Sheboygan
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Madison
Milwaukee
Racine
Janesville
Beloit
Kenosha
Dubuque
Rockford

THIRD GRADE LESSON FOUR: DIRECTIONS ON GLOBES

Required Materials:

1. Tape #4
2. 12 inch readiness globe

Behavioral Objectives:

1. Students will locate the North Pole and South Pole on a globe.
2. Given a reference point or area, students will demonstrate their ability to locate places on a globe in terms of the four main directions.

Wisconsin Design Study Skills Correlations:

1. D-2

Extension Activities:

1. Athletic events which have an international flavor (e.g., Olympics) can be made part of a globe lesson. Discuss travel via the great circle route and consider the change of day associated with crossing the international date line if the ability of the group merits it.
2. Have pupils read the following questions and answer them on a piece of paper:
    a. The point farthest north on the earth is called the North Pole. Find this point on the globe. Is the North Pole on land or water?
    b. The farthest point south is called the South Pole. Find this point on the globe. Is the South Pole on land or water?
    c. There is a make-believe line around the earth that helps us locate places. This is halfway between the North Pole and the South Pole. It is called the equator. Find this line on the globe. Name two or more countries that are on the equator.
3. Answer the questions below by locating the places on the globe and writing them on a paper numbered 1 to 7.
    a. What ocean is east of the continent where you live?
    b. What ocean is west of the continent where you live?
    c. Find Europe. What ocean is north of Europe?
    d. Find Asia. What ocean is south of Asia?
    e. Find Australia. What ocean is west of Australia?
    f. What is the only direction you can travel from the North Pole?
    g. In what direction is the equator from the South Pole?
4. Practice finding countries by going north or south from a designated point. Give practice with directions on globe. For example, "Put your finger on Beloit. What direction would you go to get to Mexico? to Canada? to Brazil?

5. Place a globe outside on the ground with Beloit at the top and the North Pole pointing due north. Place a toy figure on the globe where Beloit would be. Let one child at a time stand facing north next to the globe. Let each child compare the direction of the shadow of the figure on the globe to his/her own shadow on the earth. Face the figure toward Europe and have the child face the direction of Europe. Compare shadows; they should be parallel.
6. Take a trip around the globe. Pick out a city, such as Beloit, to start at. Then with your finger trace a journey from city to city around the globe. Students may choose cities at random and write them down on a paper. Students should also indicate the cardinal direction that students would need to go to get to the next city on the list.
7. Practice finding countries by going east or west from a designated point. Give practice with directions on a globe. Find Beloit (or Wisconsin). What direction would you move to go to the Atlantic Ocean? to the Pacific Ocean? To Europe? to Japan?
8. GAME: Which Way?
   Materials: At least 3 identifical globes and two teams
   The teacher or an appointed leader names a place on the globe (e.g., a continent, country or ocean). Player number one on each team locates this place with teacher assistance if needed. The leader then names a second place and the players find this also. The player who can first call out the direction of travel from the first to the second place gains a point for his/her team.
9. If considered appropriate for the group, point out the use of lines running east and west (latitude lines) and north and south (longitude lines) as guides for figuring out directions on a globe.
10. See Third Grade Lessons Three, Five and Six as well as Second Grade Lesson Four for additional activity ideas.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 4

Holt Correlations:

WHERE AND WHY

TEST FOR CASSETTE 4

Directions on Globes

Name ____________________

Date ____________________

Required materials: 12" Readiness or Sculptural Relief Globe

Use the globe to answer the questions below. Write your answers in the blanks.

1. Is the North Pole surrounded by land, or by water?

water

2. Is the South Pole surrounded by land, or by water?

land

3. Find the United States. What country is north of the United States?

Canada

4. Find Africa. What continent is south of Africa?

Antarctica

5. What ocean is west of Africa?

Atlantic Ocean

6. Find Australia. What ocean is east of Australia?

Pacific Ocean

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THIRD GRADE LESSON FIVE: DIRECTIONS ON MAPS

Required Materials:
1. Tape #5
2. 12 inch readiness globe or 12 inch sculptural relief globe
3. 28 inch raised relief USA
4. Nyco Marker

Behavioral Objectives:
1. Students will indicate the four main directions on a United States map.
2. Students will use the terms northern, souther, eastern, western, southeastern, northwestern, northeastern, and southwestern to describe major sections on a United States map.

Wisconsin Design Study Skills Correlations:
1. D-1

Extension Activities:
1. Practice using the terms of direction in relation to the classroom. Choose an object and say something like, "I am thinking of something in the northeastern part of our room. What might it be?" Every answer that comes from the northeastern part could be considered correct.
2. Construct a simple school or neighborhood map which is properly oriented as to direction. Once the map is constructed, have pupils describe the cardinal direction of one place to another. (In lieu of constructing a map, the school building and school district maps in the appendix may be used.)
3. Have students orient maps that they receive to true north in the classroom. This might be used as an initial exercise each time maps are distributed. Use directions other than north often.
4. Show students a North Polar projection map to help them realize that north is not always at the top of a map.
5. Create a map to accompany a story that the class is reading. At the conclusion of the story, comprehension questions can be posed which require use of directions on the map. (See Froiseth, 1969 for an example.)
6. Give students maps with no directional key. Have students make a key by referring to other maps, the globe, or wall labels in the classroom.
7. Orient a United States map to a directional floor key. Then hang the map on different walls to convey the idea that the directions do not change on the map due to different display positions.

8. Lay out the United States map. Orient the map to the directions in the room of north, south, east and west. Call out the name of a state. Have one child find the state and tell what section of the United States it is in. The same procedure can be followed with a state map and towns within the state.
9. Give each pupil a piece of drawing paper. Using the following statements or similarly written ones, describe an area. These may be written on the blackboard, on flashcards, or on an instruction sheet. Students will read the statements and draw a map according to them.
   a. There is a park in the northeast corner of the area.
   b. A highway runs north and south through the center of the area.
   c. There is a school east of the highway.
   d. Two houses are located in the northwest corner.
   e. A directional key should be located in the southwest corner of the map.
   f. Put your name on the east side of the map.
10. Create a series of circuit training exercises for a physical education period. Assign students to stations according to maps. Express instructions for movement between stations in directional terms. See Quackenbush, 1976 for an example.
11. Using a local map, perhaps a transit corporation route map with all streets indicated, have students plan a bike hike. If the hike is completed, test the students on their proficiency in reading directions by having them describe the route followed orally or in a written report.
12. Have pupils answer questions such as the following to help identify directions on maps:
   a. What general direction is the sun from you when it sets in the evening?
   b. If you see the sun appearing above a building in the morning, what general direction is the building from you?
   c. If you live in the United States, what direction is the sun from you at noon?
   d. If you lived in southern part of Chile, South America, what direction is the sun from you at noon?
   e. What direction is the opposite of west?
   f. Is west to the right or the left of north?
13. Take a strip of paper and divide it into five sections. Draw a picture of a place that you have been or would like to visit in each of the five sections. On the back, label each square to tell where this place is. Then place each of these pictures on a U.S. map. Name the direction that you would need to go from Beloit to reach each of these places.
14. Take a large outline map of the state of Wisconsin. Place it on a table and orient it to directions in the room. Use

three-dimensional objects to represent main cities (building blocks), highways (strips of black paper), waste lands (sand), forests (model trees), and lakes (blue paper or foil). Locate each place correctly by using the directions of northeast, south, west, north, east, southwest, southeast, and northwest.

15. Play a guessing game by pretending the classroom is a world map. Note the directions in the room. Decide where the equator would be, the North and South Poles could be, and the Prime Meridian might be. Using these rough gauges, the teacher or an appointed leader thinks of a child in the room and describes his/her position using directions. Sample: "I'm thinking of someone sitting in the northeast part of the room."

16. GAME: Fire in the Forest Game
Materials Needed: a red flag or marker and duplicated sheets of an outline map of the room showing only desk locations. Four children take their places in the corners of the room with pencils and classroom maps. These children are the "fire wardens." Each member of the class is a tree. One child leaves the room. A designatec child places the red "fire" marker on another child's desk to show that a tree is on fire. Each warden takes a pencil and draws a line to the fire on his map. This direct line should go from the corner s/he is in to the other edge of the paper. The marker is then placed inside the "tree" (desk). The child returns to the room and is given all four maps. Putting these maps together and observing where the lines cross, the child attempts to find the location of the tree that is on fire. If successful, the child is allowed to choose another person to leave the room. So more are involved, each of the fire wardens also selects a substitute.

17. GAME: Spinning Game
Materials Needed: a cardboard circle with a spinner of some sort; the directions N, S, E, W, NE, NW, SW, and SE should be marked on the circle
Procedure: Take a map of Wisconsin and mark Beloit as "home base". The players take turns spinning the arrow and naming a town or city that is location that direction from Beloit. Other players can check to be sure that the answer is correct. A United States or world map may be also used in this game.

18. To reveal the possible problems of orientation that can result when no directional key is provided, have four different groups of students map the classroom while facing different walls. Without discouraging the addition of a key, the teacher should not encourage its inclusion either. Select maps from each of the groups which do not use a key. In attempting to utilize such maps, other children will

likely encountered some difficulties. The cause of these difficulties should lead to the realization that a key was not included.

19. See Third Grade Lessons Three, Four and Six as well as Second Grade Lesson Four for additional activity ideas. Attention is especially directed to the map exercises at the end of Third Grade Lesson Three. These exercises would be especially worthy of expansion.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 5

Holt Correlations:
5: 1- 8 & 9; 5-2; 6-11

Name ______________________________

Date ______________________________

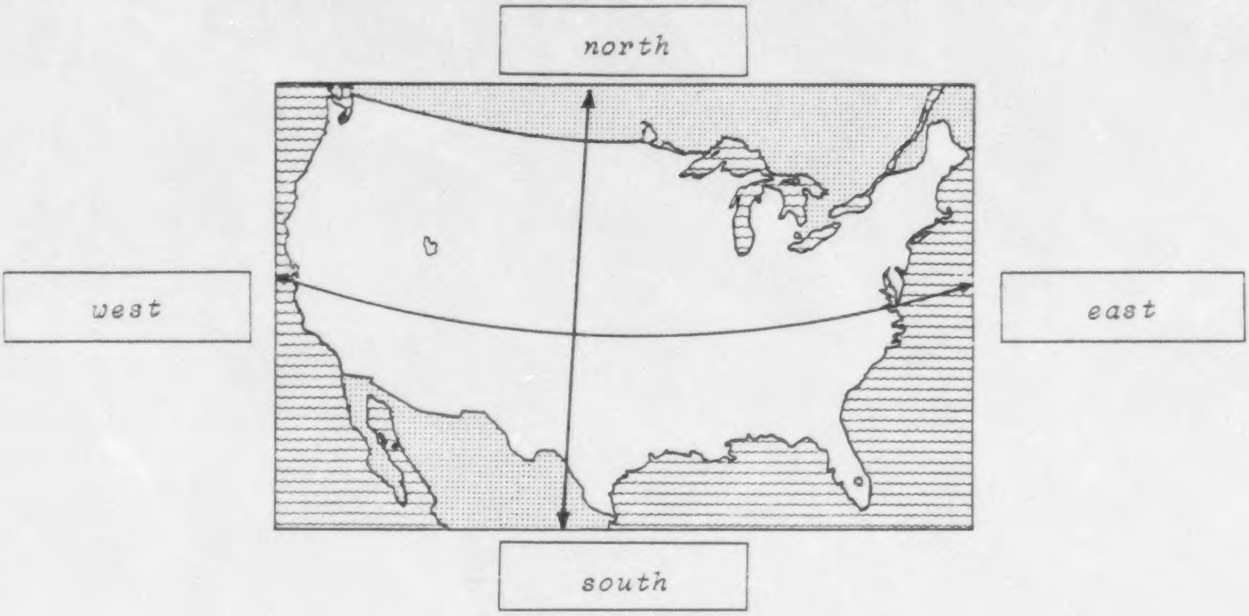
WHERE AND WHY

TEST FOR CASSETTE 5

Directions on Maps

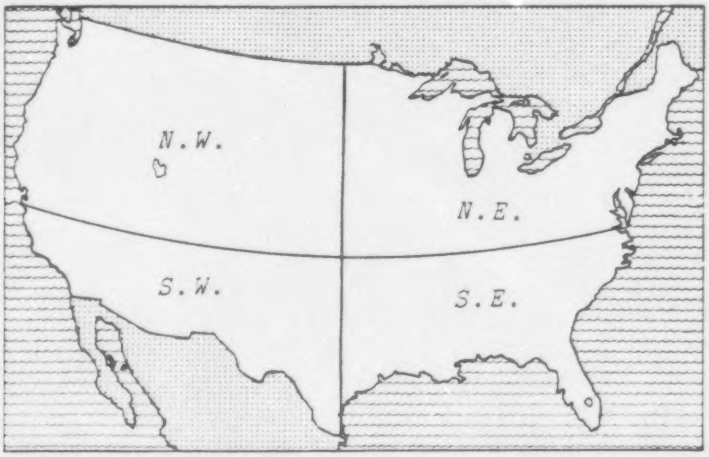
Required materials: none

1. Arrows point to the main directions on the United States map below. Write the names of the main directions in the boxes beside the arrows.



2. The United States map below has been divided into four parts.

Label the northeastern part with the letters *N.E.*
Label the southeastern part with the letters *S.E.*
Label the southwestern part with the letters *S.W.*
Label the northwestern part with the letters *N.W.*



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THIRD GRADE LESSON SIX: COMPASS ROSE

Required Materials:
1. Tape #6
2. 28 inch raised relief map of USA
3. Nyco Markers
4. Paper, Pencil, Ruler

Behavioral Objectives:
1. Given a compass rose with one of the directions labeled, students will correctly label the other main and intermediate directions.
2. Given a reference point, students will use their knowledge of compass direction to locate specific places on a United States map.

Wisconsin Design Study Skills Correlations:
1. E-2

Extension Activities:
1. Providing a couple for each pupil or each pair of pupils, have them tell where they would be if they traveled to the following places:
    a. A large island northeast of North America
    b. A small, well-known group of island in the Pacific Ocean southwest of San Francisco, California. (Hint: These are now a state.)
    c. The northwestern part of North America
    d. The southwestern part of Europe
    e. The northeastern part of Africa
    f. A continent northwest of Australia
    g. A continent southeast of North America
2. Use a Wisconsin road map. Pick a city at the center of the state. Then locate a town in each main and intermediate direction. As another extension, three or four other familiar cities can be mentioned. Have children state which direction they are from the reference point.
3. Color a map for the in-between directions (a different color for each section). Name one country in each section if a world map or one state in each section if a United States map or one city in each section if a state map.
4. Talk about sections of the state of Wisconsin in terms of Wisconsin history. For example, which section was first settled by explorers? by lumbermen?
5. Repeat the approximate procedure of 2., but using a United States map instead.
6. Using a Wisconsin highway map, find an example of a highway that goes each of the four possible ways: north-south, east-west, northwest-southeast, southwest-northeast.

7. The teacher will name a pair of cities on a state or United States map. The children will write down what direction the second city is from the first.
8. Reintroduce the compass to the class now emphasizing the intermediate directions.
9. Divide the class into groups and have them go on a scavenger hunt following compass directions. This hunt can occur in the classroom, the school building, or the playground.
10. Using the schedule of a sports team or famous athlete, have students track the reported movement of the team or athlete on the sports page by reporting the straight-line movement between locations.
11. Bring a puzzle of the United States or make a set by tracing a map of the United States twice. One of the traced maps should be backed with cardboard. The other back can be a lighter tagboard since the states will be cut apart in this case. Children should pick a state and place it on the board. The second state picked must be an adjacent north, south, east, west, northeast, northwester, southeast, or southwest. This would continue until the puzzle is completed.
12. As a variation of 11., add a spinner marked with the main and intermediate directions. An appointed leader puts one state on to be a reference point. The first player spins the spinner and must then find and place correctly a state that is that direction from the reference point. This is done until all states are on the map properly.
13. Have pupils make their own treasure maps, telling them in advance where the treasure is to be located. Further, they must use all four of the main and all four of the in-between directions for their routes to the treasure. A good measure of the efficiency of their respective maps is the ability of other pupils to find the treasure from the maps given them.
14. Using the Todd School district map after this lesson, have students add a compass rose. Then have them answer such questions as these:
    a. What is the symbol northwest of Todd School?
    b. Milwaukee Road runs ___________ to _____________.
    c. Where Turtle Creek crosses Milwaukee Road, the upstream direction of the Creek is ______________.
    d. As Turtle Creek leaves the map, its downstream direction is ______________.
    e. What is the most precise direction of Edan Court from Todd School?
    f. In which quarter of the map do you find an island?

15. Using the city map following this lesson, have students first find the directional key on the map. Using this key and the dot standing for Todd School, answer questions such as the following?
    a. What direction is the Rock River dam from Todd School?
    b. Eastlawn Cemetery is what direction from Todd School?
    c. Find the intersection of I-90 and Chester Road. What direction is Todd School from this point?
    d. From Todd School, what direction would you go to get to the Riverside Lagoon?
    e. Madison Road runs ______________ to _________________.
    f. The Wisconsin-Illinois boundary runs _______to ________.
16. Using the state map following this lesson, have students first add a compass rose. Then have them answer such questions as these:
    a. Name cities that are the following directions from Beloit:
        (1) south
        (2) north
        (3) east
        (4) west
        (5) northeast
        (6) northwest
    b. From Superior to Wausau, one would go what direction?
    c. Eau Claire is what direction from Wisconsin Rapids?
    d. What city would you come to if you went north from Dubuque, Iowa?
    e. Going southeast from Madison, what is the name of a city that you would come to? (Kenosha is one of the possible answers)
    f. Name a city southwest of Green Bay. (Appleton is one of the acceptable answers)
17. See Third Grade Lessons Three through Five as well as Second Grade Lesson Four for more ideas.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 6

Holt Correlations:
2: 2-24 & 25;
5: 1-2

Name ______________________________

Date ______________________________

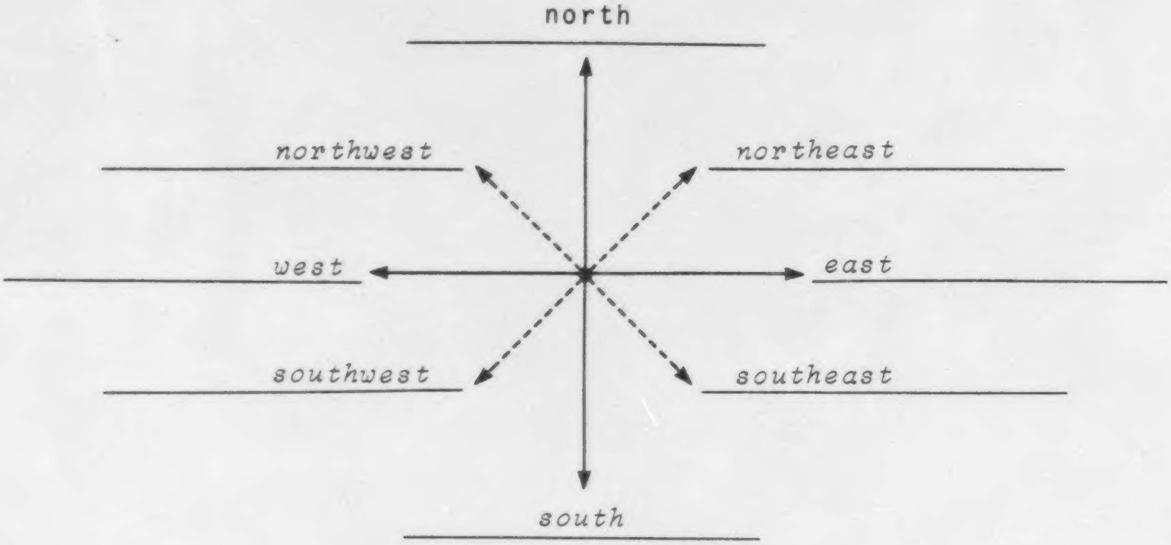
Required materials: Raised Relief U.S. Map (28" x 18")

WHERE AND WHY

TEST FOR CASSETTE 6

Using a Compass Rose

1. The set of arrows below is called a *compass rose*. The direction north is labeled. Label the other main directions and the in-between directions.



Use the plastic map of the United States to answer the questions below. First find the city of Beatrice, in the state of Nebraska. Beatrice is near east-west line 40 and north-south line 95.

2. Name the first city east of Beatrice. *Maryville*

3. Name the first city southwest of Beatrice. *Fairbury*

4. Name the first city northeast of Beatrice. *Nebraska City*

5. Name the first city south of Beatrice. *Manhattan*

6. Name the first city north of Beatrice. *Lincoln*

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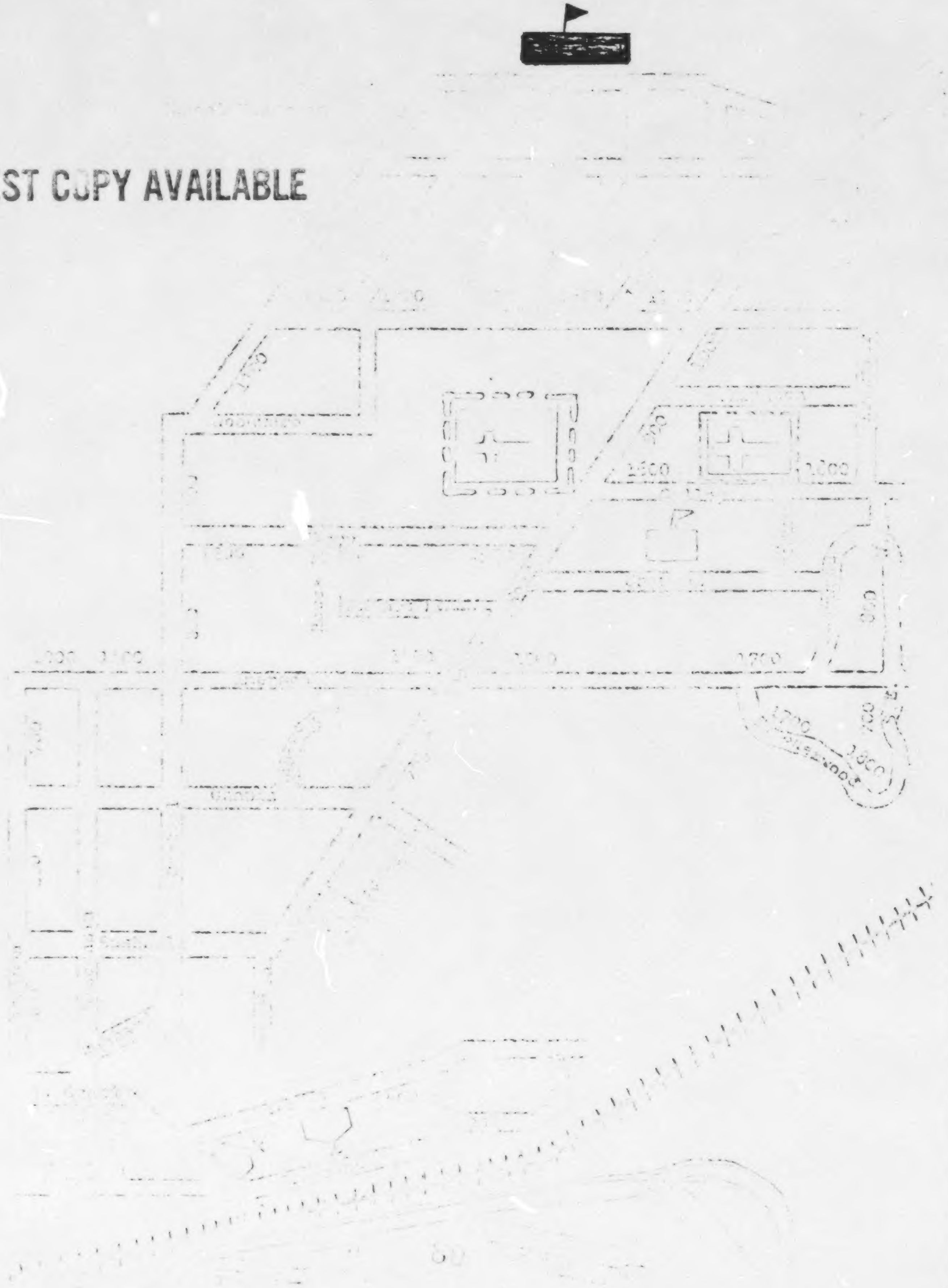
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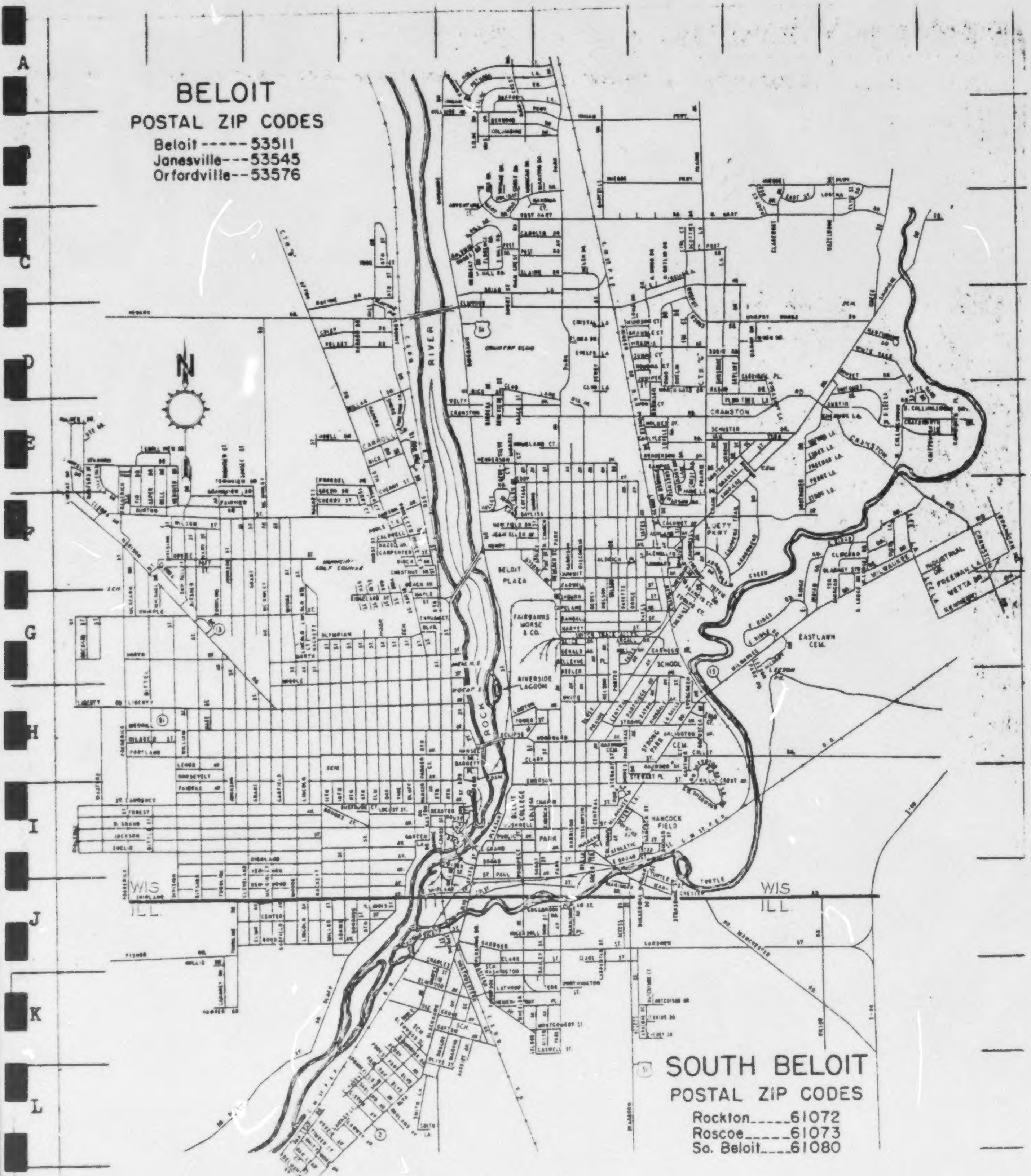
BELOIT
POSTAL ZIP CODES
Beloit------53511
Janesville---53545
Orfordville--53576
N
RIVER
ROCK
BELOIT PLAZA
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SCHOOL
HANCOCK FIELD
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CRANSTON
WIS
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SOUTH BELOIT
POSTAL ZIP CODES
Rockton_____61072
Roscoe______61073
So. Beloit____61080
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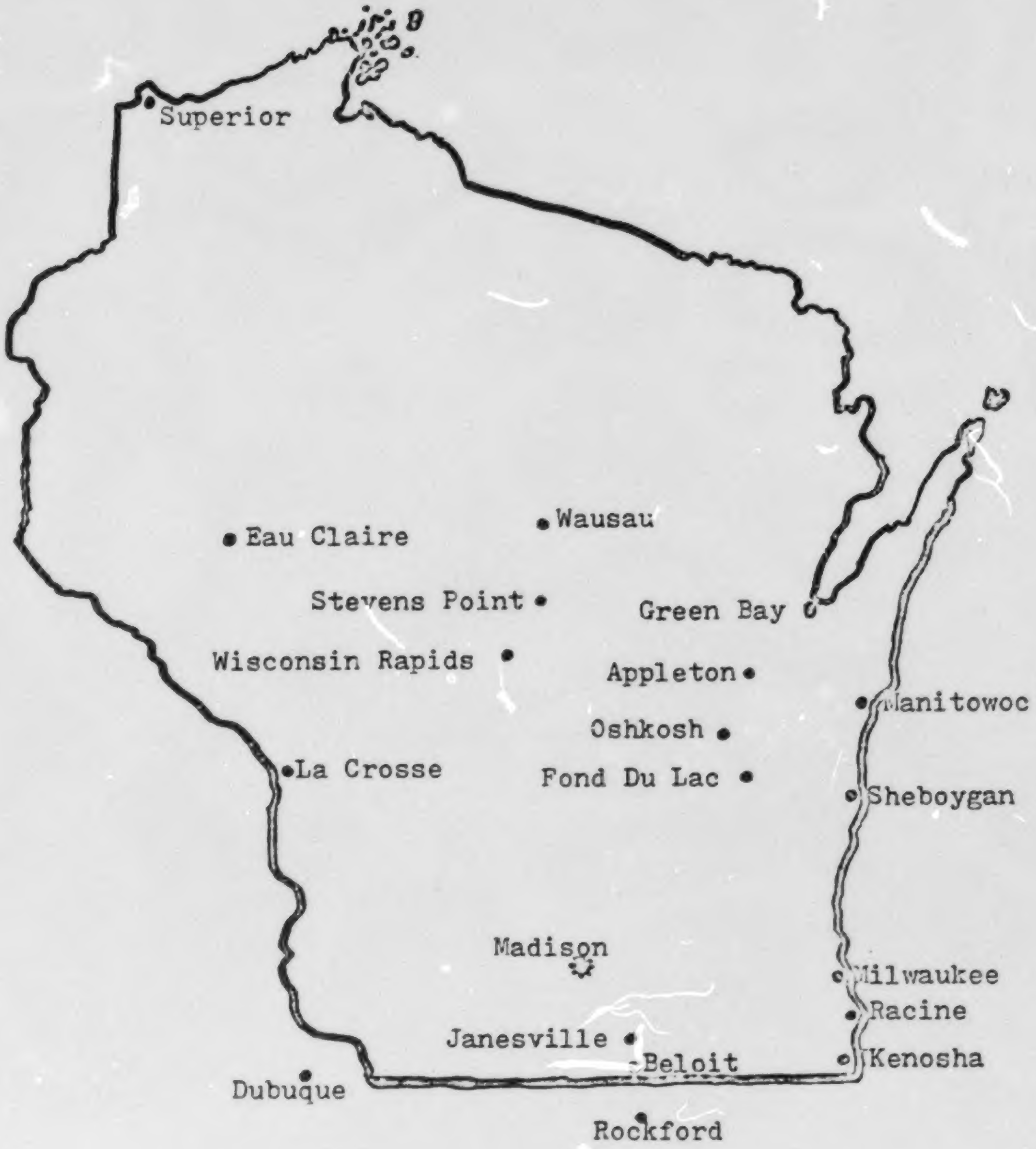
Superior
Eau Claire
Wausau
Stevens Point
Green Bay
Wisconsin Rapids
Appleton
Manitowoc
Oshkosh
La Crosse
Fond Du Lac
Sheboygan
Madison
Milwaukee
Racine
Janesville
Kenosha
Beloit
Dubuque
Rockford

FOURTH GRADE LESSON ONE: HEMISPHERES

Required Materials: Tape #7
12 inch sculptural relief globe

Behavioral Objectives:
1. Students will define a hemisphere as any half of a sphere.
2. Using a globe, students will name the continents that are located in the Northern, Soutnern, Eastern, and Western Hemispheres.

Wisconsin Design Study Skills Correlations:
1. E-2

Extension Activities:
1. Cut an orange or ball in half so each child can actually see what the term hemisphere means.
2. Discuss the origin of the word hemisphere.
3. Make a paper mache model of the world that comes apart at the equator. Discuss the origin of the word equator (equal) to help get across the idea that it dives the world in half.
4. Read short stories or descriptions of countries or other appropriate geographic divisions. Based on the information in the stories, have students determine whether the land mass is in the northern or southern hemisphere. Then locate on map to confirm or refute answer.
5. Make a paper mache globe which comes apart at the prime meridian. Label the eastern and western hemispheres.
6. Locate countries, cities, and lakes on a globe or world map with reference to the prime meridian (east of it or west of it). Read stories and descriptions that refer to easterners and westerners. Locate the specific country that the people you read about are from. Discuss prejudices and stereotypes about easterners and westerners (within the United States and throughout the world). Use maps, slides and pictures to give students a sense of the difference between east and west culturally and environmentally. Ask students in what way the stereotypes and/or prejudices about easterners and westerners are connected with the physical and cultural geography of the hemisphere or region.
7. Locate islands on a globe or map with reference to whether they are in the eastern or western hemisphere.
8. Have children trace great circle air routes on maps and on globes. Ask them what a great circle creates? What is the name of the special great circle at 0 degrees longitude? at 180 degrees longitude?
9. Have students locate a variety of countries or cities and write down the hemispheres that they are found in. Begin by just having them put northern or southern. Then add eastern

or western so they must have two answers for each one. (Example: Germany--northern, eastern)

10. Have each student locate a different city in each hemisphere. From only their general knowledge of the hemisphere and the city's location in that hemisphere, have students describe what it might be like as best they can. Then they can look up more information and picture about the city to find out how close they were to describing its geographical and physical features. In small groups the children can share knowledge about the cities and answer such questions as: What conclusions can we draw about the characteristics of the hemisphere from our knowledge of the cities we have studied in the hemisphere? That is, what do all the cities have in common, such as land, climate, etc.? What factors contribute to differences between each city, even though they are in the same hemisphere (altitude, for example)?

11. Use a piece of string to divide the earth into hemispheres. Wrap the string around the globe at the equator. Find the half of the earth between the equator and the North Pole. Find the half between the equator and the South Pole. Have the children write the answers to questions such as these:
    a. Do you live in the northern or southern hemisphere?
    b. Which of these two hemispheres has more land?
    c. Which hemisphere has more water?

    Now use the same piece of string to divide the earth in halves the other way into eastern and western hemispheres. Have the children write answers to questions such as these:
    a. Do you live in the eastern or western hemisphere?
    b. Which of these two hemispheres has more land?
    c. Which of these two hemispheres has more water?

12. GAME: Hemisphere Tic Tac Toe
    Divide the class into two teams. As each student's turn comes up, he should have a globe to look at. Give the first student on one team the name of a country, city, or continent. If he can correctly identify the hemisphere it is in, he can put an "X" any place he would like on a Tic Tac Toe diagram drawn on the board. The first person on the "O" team would then be given a different place to find. If he cannot give the correct hemisphere, he cannot place an "O" on the diagram and the turn goes back to the Xs.

13. GAME: Which Hemisphere?
    The "champion" gives the name of a hemisphere. The "challenger" must name a country located in the hemisphere named. The "champion" slowly and quietly counts to ten. The "challenger" must provide an answer within that period of time. If the "challenger" does so successfully, s/he becomes the "champion".
    Adaptation: Cities or other features might be used in place of countries.

Caution: During the first few times that this game is played, it would be helpful to use a world map or a globe. Later, these should still be available for reference if needed.

14. The teacher should also examine the activities for Fourth Grade Lesson Four for additionals ideas.

Reference Materials:

Criterion-Rferenced Test: Where and Why Test for Cassette 7

Holt Correlations: 6-3-16; 6-10-1 & 2; January 3-first grade;

WHERE AND WHY

TEST FOR CASSETTE 7

Hemispheres

Name ______________________________

Date ______________________________

Required materials: 12" Readiness or Sculptural Relief Globe

Use the globe to answer the questions below. Write your answers in the large blanks.

1. *Hemi*sphere means___a sphere.

half

2. What line separates the Northern Hemisphere from the Southern Hemisphere?

equator

3. What continents are partly in the Northern Hemisphere and partly in the Southern Hemisphere?

South America

Africa

4. What continents are entirely in the Northern Hemisphere?

North America

Europe

Asia

5. What continents are entirely in the Southern Hemisphere?

Australia

Antarctica

6. What two lines separate the Eastern Hemisphere from the Western Hemisphere?

0° or prime meridian

180°

7. What continents are entirely in the Western Hemisphere?

North America

South America

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FOURTH GRADE LESSON TWO: LATITUDE

Required Materials:
1. Tape #8
2. 22 inch graphic project globe
3. 12 inch sculptural relief globe
4. chalk

Behavioral Objectives:
1. Students will use the term line of latitude, east-west line, and parallel interchangeably.
2. Given specific lines of latitude, students use a globe to name the continents through which the lines extend.
3. Students identify the equator as the line at 0 degrees latitude. They will identify the North and South Poles as points that are 90 degrees north and south latitude, respectively.

Wisconsin Design Study Skills Correlations:
1. E-3
2. G-2

Extension Activities:
1. Learning to Use a Globe, pages 5-10
2. Learning to Use a Map, pages 26-28
3. Ask students to explain why lines of latitude are called parallels.
4. Have students speculate on occupations that might be related to different latitudinal locations.
5. Give the students a world map with no lines of latitude. Ask them to put in specific lines of latitude at the approximate location which students envision them to be.
6. See Fourth Grade Lessons Three and Four for additional activities which can be adapted to this lesson.

Referenced Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 8

Holt Correlations: 6-2-1; 6-4- 14 & 15

Name ____________________________________

Date ____________________________________

Required materials: 12" Readiness
or Sculptural Relief Globe

WHERE AND WHY

TEST FOR CASSETTE 8

Latitude

Use the globe to answer the questions below. Write your answers in the large blanks.

1. Are lines of latitude east-west lines, or north-south lines?

east-west lines

2. Lines of latitude are also called___.

parallels

3. Follow the line at 30° south latitude. What continents does it pass through?

South America

Africa

Australia

4. Follow the line at 60° north latitude. What continents does it pass through?

North America

Europe

Asia

5. What is the name of the line at 0° latitude?

equator

6. What is the name of the point at 90° north latitude?

North Pole

7. What is the name of the point at 90° south latitude?

South Pole

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FOURTH GRADE LESSON THREE: LONGITUDE

Required Materials:

1. Tape #9
2. 22 inch graphic project globe
3. 12 inch sculptural relief globe
4. chalk

Behavioral Objectives:

1. Students use the terms line of longitude, north-south line and meridian interchangeably.
2. Given specific lines of longitude, students will use a globe and name thecontinents through which the lines extend.
3. Students identify the prime meridian as the line at 0 degrees longitude.

Wisconsin Design Study Skills Correlations:

1. E-3
2. G-2

Extension Activities:

1. Learning to Use a Globe 2, pages 11-17.
2. Learning to Use a Map, pages 29-30.
3. Latitude and Longitude Learning Station (see Godfrey, 1973)
4. Nystrom Map Symbols and Geographic Concepts Charts 40 and 41. Refer to the activities on the back of each chart.
5. By having pupils measure distances between lines of longitude at different latitudes, the student can come to realize that lines of longitude are equidistant at the equator and that this distance diminishes as one moves toward the poles.
6. Given one line of longitude, have the students figure out what the other line of longitude would be to make a great circle.
7. Have the students find out the origin of the word "meridian".
8. Working Model--Latitude and Longitude
   Materials: 12" x 12" piece of brown wrapping paper
   12" x 12" piece of white wrapping paper
   18" x 18" piece of colored paper (any color)
   scissors, stapler, ruler, and paper clips
   pencils with 5" pieces of string attached
   Procedure: Each student receives a piece of each of the three colors of paper, a pencil with the string attached, a ruler, and scissors. Measure to find the center of the white piece of paper. Place the loose end of the string on this center point, hold tightly, and draw a circle with a five inch radius. Do the same on the brown paper. Using the atlas for measurements, draw assigned longitude lines on the

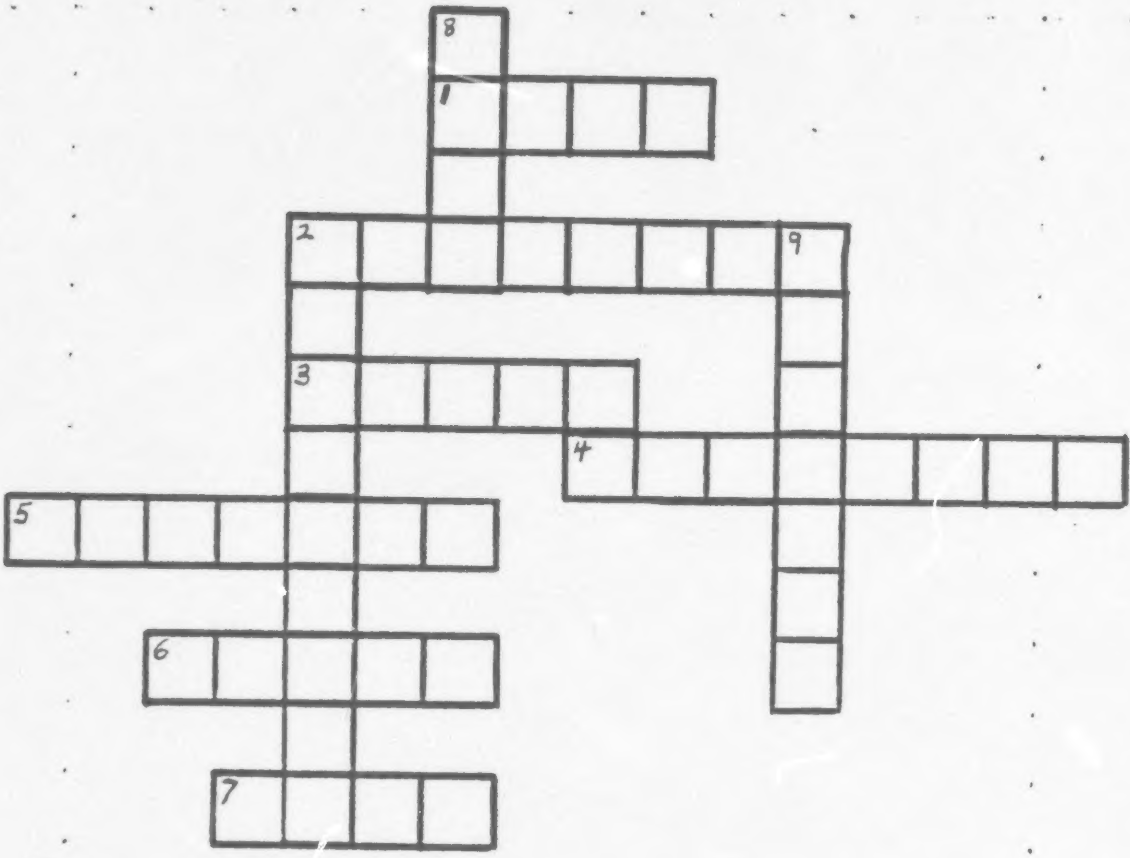
brown paper and assigned latitude lines on the white paper. Make each line $\frac{1}{4}$" wide and cut all of the circle away except for these lines and the outside frame. Write designations on the appropriate lines (e.g., equator). Now clip the brown paper to the colored sheet and place the white one over the brown one in the correct place. You now have a working device to help you find latitude and longitude.

9. Latitude and Longitude Crossword Puzzle
   Materials: duplicated copies of the next page
   Directions: Divide the class into sets of partners. Each person is given a copy of the puzzle and the following directions: "What do you remember about latitude and longitude? Let's find out by completing this crossword puzzle. Can you do it more quickly than your partner?"
   Caution: The competing partners should haver nearly equal ability.
   Adaptation: This puzzle could be used as an open-book exercise at the beginning of a lesson on latitude and longitude.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 9

Holt Correlations: 6-3-2



ACROSS

1. The earth rotates on its ________.
2. Measures distance north or south of the equator.
3. We live in the ________ latitudes.
4. Line of latitude.
5. Line of longitude.
6. The ________ Pole is located on land.
7. We live in the ________ longitudes.

DOWN

2. Measures distance east or west of the reference point.
8. Toward the rising sun.
9. The zero degrees parallel.

Name________________________________

Date________________________________

WHERE AND WHY

TEST FOR CASSETTE 9

Longitude

Required materials: 12" Readiness or Sculptural Relief Globe

Use the globe to answer the questions below. Write your answers in the large blanks.

1. Are lines of longitude east-west lines, or north-south lines?

north-south lines

2. Lines of longitude are also called___.

meridians

3. Follow the line at 120° east longitude. What continents does it pass through?

Asia

Australia

Antarctica

4. Follow the line at 60° west longitude. What continents does it pass through?

North America

South America

Antarctica

5. What is the name of the line at 0° longitude?

prime meridian

6. What is the largest longitude number?

180

7. What two lines separate east longitude from west longitude?

prime meridian, or 0° longitude

180th meridian, or 180° longitude

8. What continent does *every* line of longitude pass through?

Antarctica

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FOURTH GRADE LESSON FOUR: USING THE GRID SYSTEM

Required Materials:
1. Cassette #10
2. 12 inch sculptural globe
3. 28' x 18' raised relief U.S. map
4. Nyco Marker
5. Paper and Pencil
6. Ruler

Behavioral Objectives:
1. The students will define the terms grid and intersection.
2. Given the latitude and longitude of several unnamed cities, students will use the grid system on a map or globe to name the cities at these locations.
3. Given a particular city, the student will determine the coordinates of that city.

Wisconsin Design Study Skills Correlations:
1. E-3
2. B-2
3. C-2

Extension Activities:
1. Local highway maps are well-suited for use in teaching this skill. The teacher is advised to pick two coordinates initially that intersect on a major point of interest to increase interest.
2. Construct a simple map of the classroom. Have pupils locate persons and objects in the room according to a grid system on the map.
3. As an introduction, ask students how places on the earth can be located. Ask when it might be necessary to have this knowledge.
4. Give the pupils the name of a city and a pair of coordinates. Ask which coordinates correspond to the location of the city.
5. Choose places relevant to subject matter that students are studying or what is in the news headlines and have students fill out answer sheets identifying the latitude and longitude of each place.
6. Ask students to look up places on a highway map that are connected to specific problems or interests and identify the name of the two and the number and letter at which it is located. For example, list six towns on the Wisconsin River and give the letter-number coordinates of each.
7. For exercises demonstrating how intersecting lines help the pupils make accurate statements about location, see Picozzi, 1969.
8. Let children bring oranges (or similarly shaped fruit) from home to demonstrate the concepts of latitude and longitude intersection.

9. Mark off the classroom, placing numbers along one wall and letters along another. Have each student locate his/her desk and other items or desks using the grid system.
10. Have the students plan a vacation trip through Wisconsin. Limit them in mileage. Have them name the cities that they will visit and the grid coordinates of each.
11. Play a game of checkers. Label across the top and down one side the size grid letters and numbers. The only way that a player can move is by naming the coordinates of the square that he would like to move to.
12. GAME: Locate the City
    This game requires a road map with letter-number grid. One child will name a city and call on a child to give him the correct letter and number for that city. If the answer is correct, that child may give the next city and the game continues in this way. The game may also be played by giving the name of the city and its coordinates and having a child point to the city on the map.
13. Give the students directions to a treasure in the room after marking off the classroom as in 9. above. The directions are in the form of letter-number coordinates. See if any pupils figure out that they would have been able to go directly to the treasure area by using the last pair of direction coordinates.
14. Create a transparency grid for a story that you read to the class. Ask the students questions about story events that can be answered with letter-number coordinates from the map. For an example, see Froiseth, 1969.
15. To have pupils inductively discover the need for reference lines such as meridians and parallels, the teacher can use a classroom situation. The teacher can ask the children to describe where a certain child sits. If they state that the child sits toward the front of the room, point out that several children sit toward the front of the room. The children will then realize that, for an accurate description of where a particular child sits, they must mention the vertical row and the horizontal. The pupils can then transfer these learnings to a map or a globe to describe the location of places.
16. To give children inductive experiences that will help them discover the necessity for more accurate reference points, take a large beach ball filled with air and mark a point on it. Ask students to describe the location of the point. Rotate the sphere in many directions so that they can see that it is necessary to explain location in more than one way. This should cause them to feel a need for reference lines. Is one line enough? Put several points along the same line to indicate that one is not enough.
17. An understanding and an ability to use the grid system for

locational purposes can begin simply by asking students the location of their home town. Answers will vary depending upon the student. Some will locate their home town by saying that it is in the central part of the state; or that it is about 45 miles south of the state capital; or that it is near a particular city. Because these answers are correct, but not necessarily accurate, students should be urged to be more precise. If no one has realized the significance of the system of numbers at the top and bottom and the letters along both sides of the map, their significance should be brought out by the teacher.

18. Assign the practice exercise immediately following this lesson.
19. Use the Wisconsin map following this lesson and ask questions such as the following:
    a. In what grid is Beloit located? (I-6)
    b. What city is located in the F-3 grid? (Eau Claire)
    c. In which grid are the most cities located? (G-7 has 4)
    d. What grid holds Wisconsin's state capital? (H-5)
    e. What Wisconsin city is in the 2-C grid? (Superior)
    f. How many Wisconsin cities are located in the I-3 grid? (none--Dubuque is in Iowa)
20. Using the Todd district map with no symbols other than the school, have each child place his/her home on the map. In which grid is the house located?
21. Use the Todd district map with symbols to answer questions such as the following:
    a. In which grid is the island located? (G-8)
    b. What is located in grid D-7? (a church)
    c. E-3 and F-3 together contain what symbol? (a cemetery)
    d. In which grids is Roosevelt Junior High located? (E-1 and F-1)
    e. What symbol runs from A-1 to G-8? (a river--actually a creek)
    f. Howes Drive is located in which grid? (D-4)
22. Use the Beloit city map to answer questions such as the following:
    a. Hancock Field is located in what grid? (I-7)
    b. What industry is located in grids G-5 and G-6? (Fairbanks-Morse and Company)
    c. Most of the Beloit Country Club is located in what grid? (D-5)
    d. What recreational feature is located in grids F-3 and F-4? (Municipal Golf Course)
    e. In what grid is your home located?
    f. What school is located in the 5-I grid? (Beloit College)

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 10

Holt Correlations: See Next Page

HOLT CORRELATIONS:
3: 2-6; 4-2;
4: 4-11 & 13; 4-1; 3-1; 2-19, 20 and 21; 2-11; 2-1; 1-11 & 12; 5-2; 4-21; 7-15; 7-22;
5: 7-5 & 6

Name ______________________________

Date ______________________________

WHERE AND WHY

TEST FOR CASSETTE 10

Using the Grid System

Required materials: 12" Sculptural Relief Globe; Raised Relief U.S. Map (28" x 18")

Use the globe to answer questions 1-4. Write your answers in the blanks.

1. What city is at 30° north latitude and 90° west longitude?

New Orleans

2. What city is at 15° north latitude and 17° west longitude?

Dakar

3. What city is at 25° north latitude and 100° west longitude?

Monterrey

4. What city is at 56° north latitude and 38° east longitude?

Moscow

Use the United States map to answer questions 5-7. Write your answers in the large blanks.

5. What city is at 45° north latitude and 95° west longitude?

Wilmar

6. What city is at 38° north latitude and 100° west longitude?

Dodge City

7. What *lake* is at 32° north latitude and 99° west longitude?

Lake Brownwood

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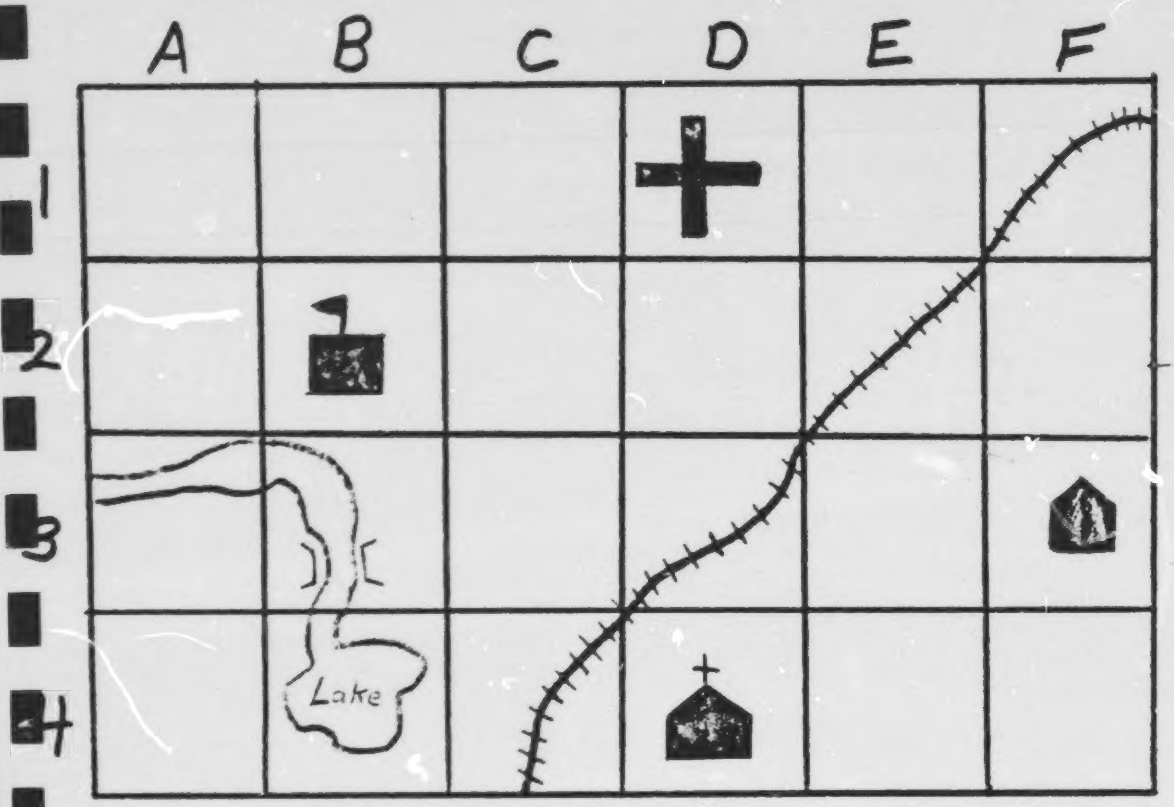


ANSWER THE FOLLOWING QUESTIONS USING THE MAP:

1. WHAT SYMBOL IS IN B-2?______________________

2. WHAT STRETCHES FROM F-1 TO C-4? ______________________

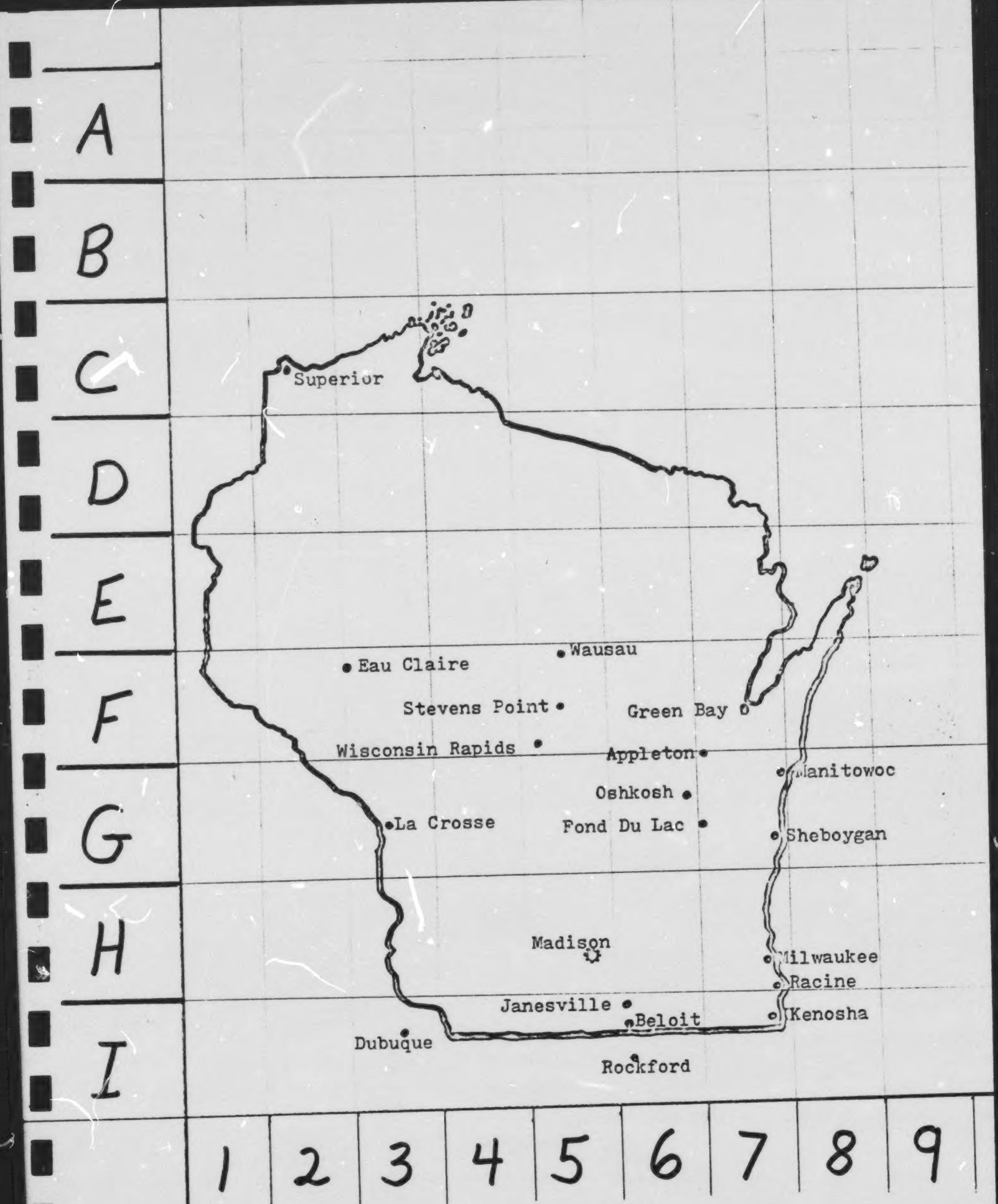
3. IN WHAT SQUARE IS THE CHURCH LOCATED?______________________

4. TO WHICH SQUARE WOULD YOU GO TO SEE A DOCTOR? ____________

5. WHAT GOES FROM A-3 TO B-4? ______________________

6. THE LAKE IS LOCATED IN WHAT SQUARE? ______________________

7. LOCATE B-3. WHAT IS THERE? ______________________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Stevens Point
Green Bay
Wisconsin Rapids
Appleton
Manitowoc
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La Crosse
Fond Du Lac
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Madison
Milwaukee
Racine
Janesville
Kenosha
Beloit
Dubuque
Rockford

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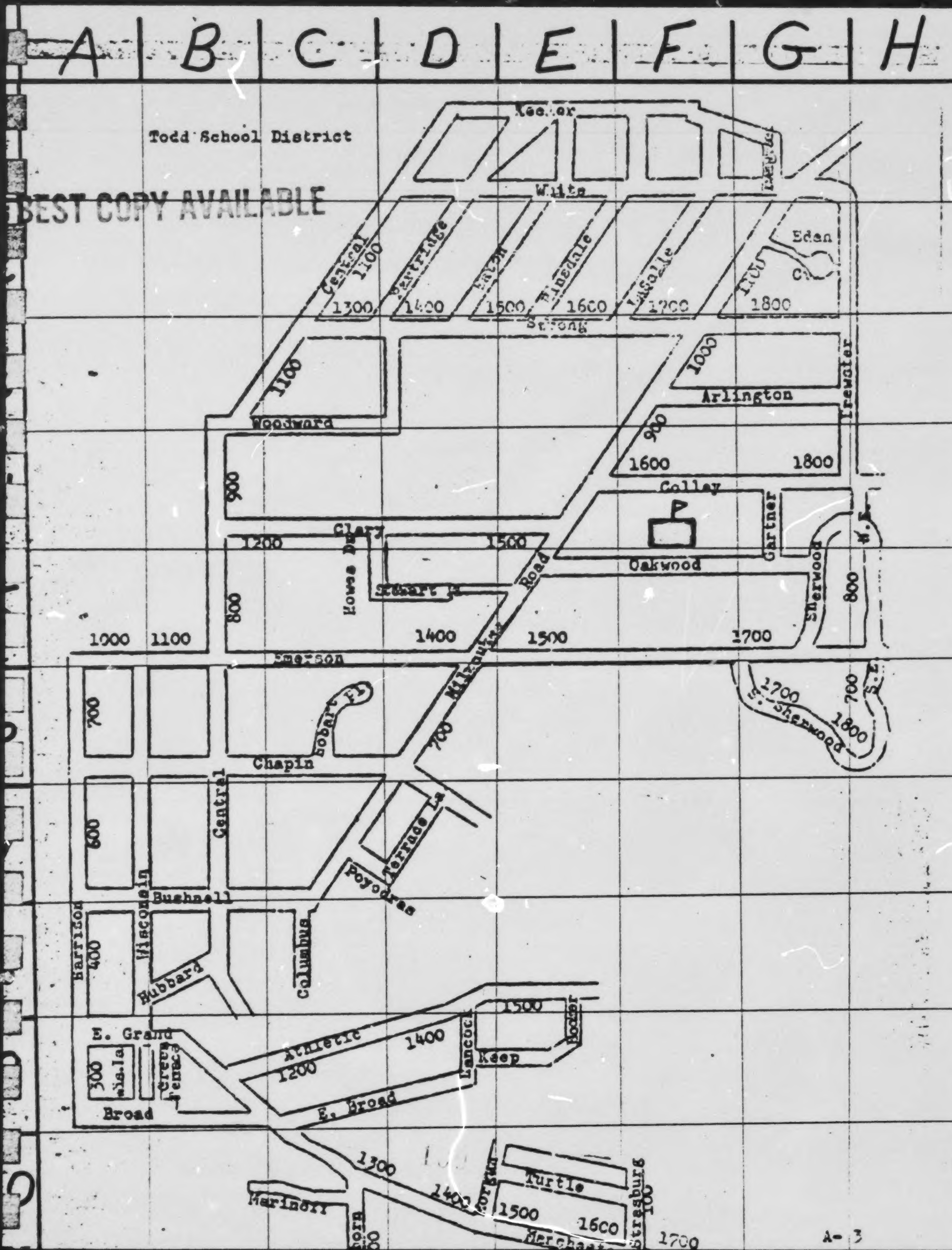
A
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H
Todd School District
Keeler
White
Central
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Partridge
Wingdale
LaSalle
Eden
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1400
1500
1600
1700
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Strong
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1000
Arlington
Woodward
900
1600
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Colley
Gartner
Trewaler
Clary
1200
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Howes Dr
Hobart
Road
Oakwood
Sherwood
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Milwaukee
Emerson
700
Hobart Pl
Chapin
S. Sherwood
1700
1800
700
600
Central
Terrace La
Poyodras
Bushnell
Harrison
400
Wisconsin
Hubbard
Columbus
1500
Hodder
E. Grand
Athletic
1400
Lancot
Keep
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Morgan
Turtle
Strasburg
Marinoff
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1600
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Merchants
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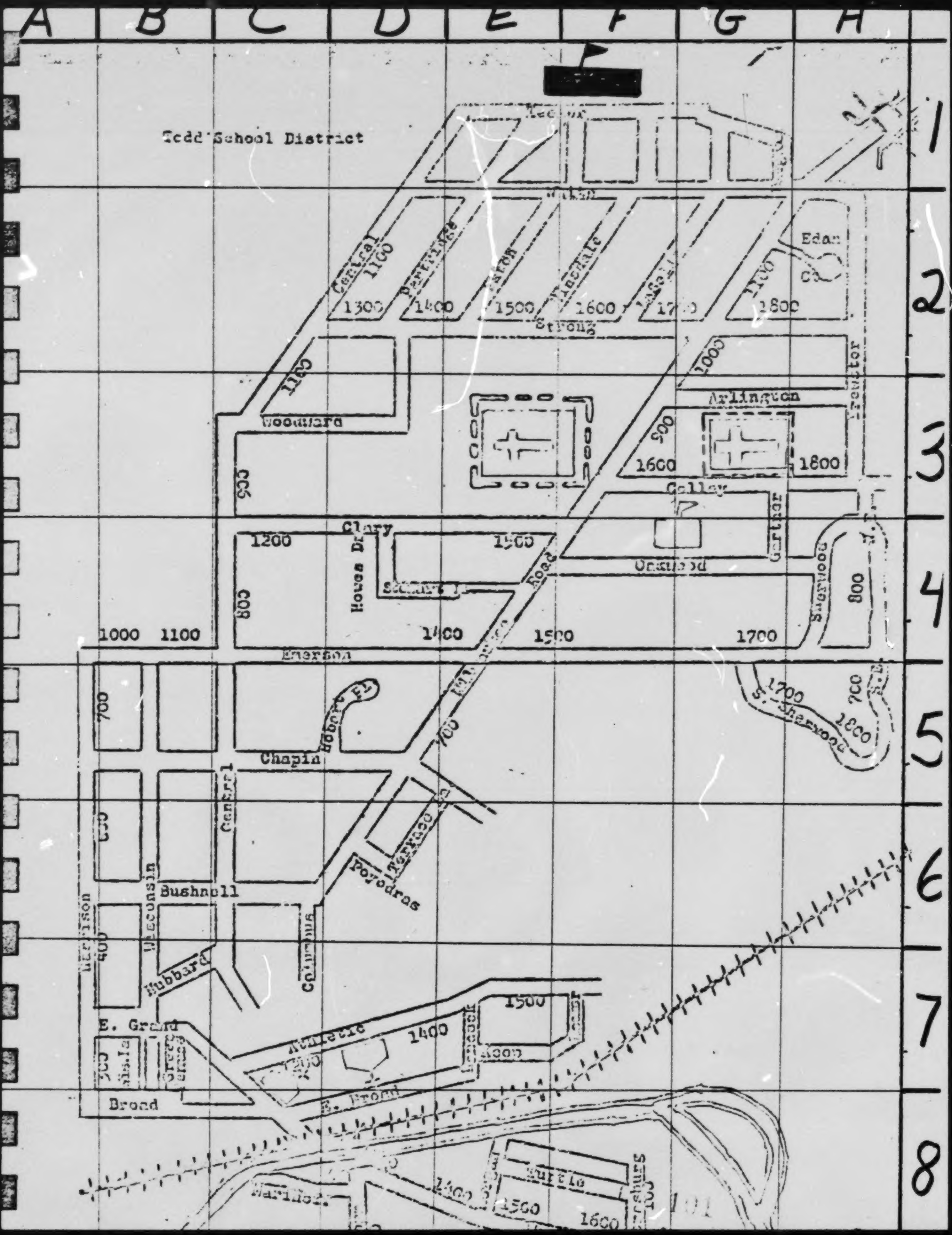A
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Emerson
Road
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Hobart Pl
Chapin
Central
Terrace
Poyodras
Bushnell
Wisconsin
Columbus
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E. Grand
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Broad
E. Broad
Marion
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Harrisburg
101

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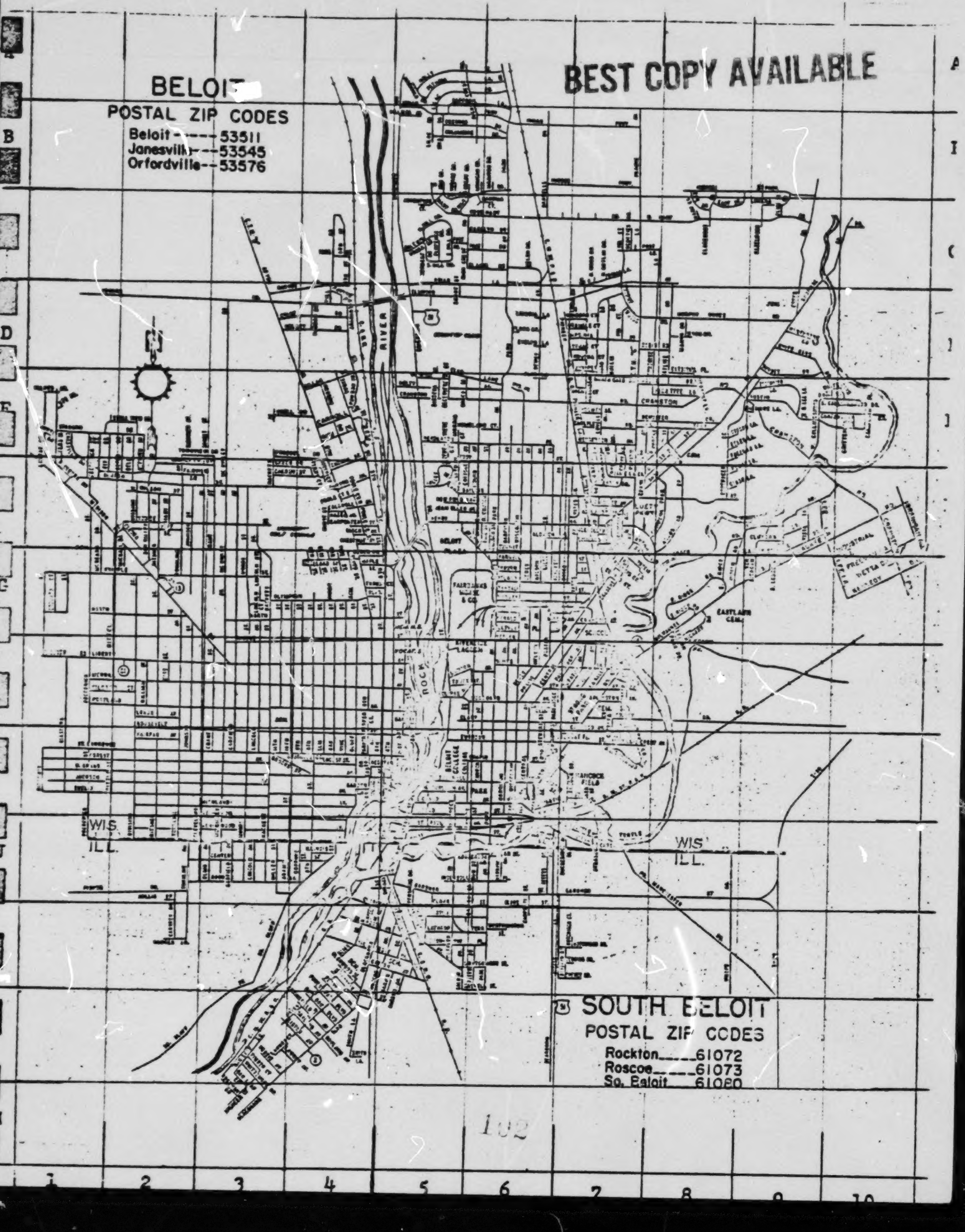

BELOIT

POSTAL ZIP CODES

Beloit-----53511
Janesville---53545
Orfordville--53576

SOUTH BELOIT

POSTAL ZIP CODES

Rockton_____61072
Roscoe_____61073
So. Beloit ____61080

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RIVER
ROCK
BELOIT COLLEGE
FAIRBANKS MORSE & CO.
RIVERSIDE LAGOON
CRANSTON
EASTLAWN CEM.
WIS
ILL.
WIS
ILL.

FIFTH GRADE LESSON ONE: DISTORTION, PART ONE

Required Materials:

1. Tape #11
2. 12 inch sculptural relief globe
3. Readiness Wall Map of the World
4. World Desk Outline Maps DD9 and DD99
5. Paper, Pencil, Ruler

Behavioral Objectives:

1. Given a world map and globe and asked to compare the size and shape of selected areas, students choose the globe as being more accurate as a reference.
2. Students will be able to define the term distort or distortion.

Wisconsin Design Study Skills Correlations:

1. F-2

Extensions Activities:

1. See Part Two suggestions.

Reference Materials:

1. See Part Two suggestions.

Holt Correlations:

1. See Part Two suggestions.

FIFTH GRADE LESSON ONE: DISTORTION, PART TWO

Required Materials:
1. Tape #12
2. 12 inch sculptural relief globe
3. 28 inch raised relief world map
4. Nyco Marker
5. Ruler, Clay, String (exactly 5 3/4 inches long)

Behavioral Objectives: See Part One Objectives

Wisconsin Design Study Skill Correlations:
1. F-2

Extension Activities:
1. Find maps where the size of land and water masses and distances have been sacrificed in favor of true compass directions. Which is more correct on maps made by the Mercator projection?
2. Compare a series of 8½ x 11 maps. Look at the same land mass area. Arrange the maps in order of size of the area to reveal which maps distort the area the most.
3. An exercise similar to 2. can be devised concentrating on shape rather than size of the same land mass.
4. Based on exercises 2. and 3., what generalization can be drawn regarding the relationship between the surface area shown and the amount of distortion.
5. Present the students with a variety of flat maps and a globe. Ask which maps do not distort that which is represented on the globe. The ultimate answer is that all of them distort the globe representation in some way.
6. Compare the location of the same area on two projections. Which one more accurately represents the area? How do you know? (By comparing the maps with the area on a globe.)
7. Provide world map examples of the three types of distortions. Use these projections to answer these questions:
    - a. Which projection distorts distances and areas in hemispheres? (Polar)
    - b. Which projection has a north-south distortion in the equatorial region? (Mollweide)
    - c. Which projection greatly enlarges areas near the North and South Poles? (Mercator)
8. Find as many map projections as possible and display on a bulletin board, making sure to label each projection.
9. Look into atlas and old history books to find maps that explorers have made. Note the inaccuracy of distance and shape. Discuss why beginning maps were so inaccurate.

10. Use both a world map and a globe. Choose one latitude such as 40 degrees north and follow it around the globe and across the map. Make notes as to the differences as to where the lines go through the continents and countries.
11. Have students look at a flat map and notice that along the sides of the map, the latitude becomes greater rather than staying parallel as on a globe. On which type of projection does the gap between latitude lines become the greatest?

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassettes 11 and 12 (first six items only)

Holt Correlations:
5-3-5; 5-4-3; 5-5-7 & 8

Name ______________________________

Date ______________________________

Required materials: 12" Sculptural Relief Globe; Raised Relief World Map (28" x 18"); 8-inch strip of paper

WHERE AND WHY

TEST FOR CASSETTES 11-13

Distortion
Scale and Measurement

Use the world map or the globe to answer the questions below. Write your answers in the blanks.

1. Which is larger: Greenland or Australia?

Australia

2. In answering Question 1, which did you use: the world map or the globe?

globe

3. Why?

World map distorts size, globe does not.

Before answering the next questions, find the cities of Halifax and Caracas. Halifax, Nova Scotia, is in the southeastern part of Canada. Caracas, Venezuela, is near the northern coast of South America.

4. Suppose you wanted to know the distance from Halifax to Caracas. Which would you use: the world map or the globe?

globe

5. Why?

World map distorts distance, globe does not.

6. What is the distance in miles from Halifax to Caracas?

about 2500 miles

Before answering the next question, find the cities of Salvador and Dublin. Salvador, Brazil, is on the east coast of South America. Dublin is in Ireland, an island west of Europe.

7. What is the distance in miles from Salvador to Dublin?

about 5000 miles

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FIFTH GRADE LESSON TWO: SCALE AND MEASUREMENT

Required Materials:
1. Tape #13
2. 12 inch sculptural relief globe
3. 28" x 18" Raised Relief World Map
4. Nyco Marker
5. Penci
6. Three Strips of Paper--8" x ½"

Behavioral Objectives:
1. Students will use the graphic scale to measure the distance in miles between specified locations on both maps and globes.
2. Students will use an inches-to-miles scale to measure the distance in miles between specified locations on flat maps.

Wisconsin Design Study Skills Correlations:
1. D-3
2. E-3
3. G-3
4. F-3

Extension Activities:
1. GAME: How Far?
   Players all have two map projections of the world or the United States on their desks. They also need a ruler and possibly a pencil. The leader names two places on either the world map or the U.S. map. Each player finds the distance between these places with the aid of the ruler and map scale. They are to compare these distances and tell which is greater. The person with the correct answer first gets to be the new leader.
2. Chart 32 from Map Symbols and Geographic Concepts Charts and its related activities found on the back of the chart could be used with this lesson.
3. Measure the distance of an acre and then make a drawing to scale. A quick way will be to measure a string 208 feet long in the room. Then this string can be used to stake out a plot of the playground 208' x 208'. (An acre contains 43,560 square feet. These dimensions are a little short, but close enough and easy for children to draw to scale.)
4. Using a map, such as a county map, pupils will map the same area but to a different scale.
5. Have students walk various distances around the neighborhood and measure them. Then a neighborhood map can be constructed to scale based on the cumulative class reports.

6. Refer to the map of the Todd School District which follows this lesson. How can students figure out what the scale of this map is? Let students test their theories.
7. A chart could be constructed indicating the distances in blocks that each student lives from school.
8. Locate Madison and Milwaukee on two maps of different scales. Ask students if the distances between the two cities are really different. Then ask why the distances seem different. Apply the two different scales to prove that the distances remain constant.
9. To establish the relationship between time and distance of travel, repeat exercise 7., but with students calculating the time that it takes them to get to school. When converted into a bar graph, the ratio should be about the same as for the one previously constructed, allowing for different walking rates.
10. Show picture maps of people from both the same and different points going to the same place in different amounts of time via different means of transportation. Figure out the number of miles each distance is, providing information on how far one can go in a certain amount of time via certain transportation.
11. Give the students each a different scale and have them make maps of the same area. These can be compared to indicate the influence of scale on map construction.
12. Using a highway map, estimate the distance in miles to a location (or various locations). Determine how long it might take to get there by car given a predetermined rate of speed.
13. Compare two maps of the same area but with different scales. Ask which one more clearly shows the details of the area?
14. Compare a highway map and a map in an atlas of Wisconsin. Look at a specific area that students have studied in Wisconsin history on a small scale map. Have them focus on a small area on this map and try to draw a larger scale map based on the small scale map and on information learned from the prior historical study.
15. Using a highway map to estimate distances, make a chart showing distances from one place to another by different means of transportation.
16. Establishing that one degree of latitude equals about 70 miles, measure distances between cities at the same longitude on a globe.
17. Bring in a variety of maps. Ask students to arrange them in order, placing the map with the most miles per inch first.
18. Establishing that one degree of latitude can be further subdivided into 60 minutes, calculate difference between cities on the same longitude down to the exact minute if

feasible.

19. Translate distances derived from a highway map into a bar graph.
20. Ask students why it is helpful to be able to measure distances on maps.
21. Having established that one degree of latitude is equal to seventy miles, have pupils determine distances between cartographic elements. For example, what is the distance from the equator to the South Pole? What is the distance around the world following a great circle route?
22. To get a better feeling for their accomplishments, have pupils measure the distances traveled along Indian trade routes, routes of early explorers in various parts of the world, pre-Civil War underground railroad routes, routes of migrant workers following the harvests, routes of pilgrimages in Europe, etc.
23. Students who are driven to school or who are carried to school on buses can ask the drivers to let them observe the distance traveled on the odometer. Who travels the greatest distance?
24. Ask the students what the advantages of small scale maps are? of large scale maps?
25. To initiate a study of map scale, ask how far it is from one city to another on a map provided all pupils. Some answers are likely to be precise figures obtained by adding the mileage figures shown on the map. Although this is acceptable, it should be pointed out that it is time consuming. A faster method would be to use the scale shown in the legend. Once attention is drawn to map scale, students could be exposed to a line of inquiry involving such questions as these: "What is map scale?" "How do we represent map scale?" "What is mean by one inch equals 200 miles?" Why are there maps with different scales?
26. Examining two maps with different scales, ask which map shows more total area. Ask students to formulate a generalization based on this knowledge.
27. Ask the pupils how map scale is related to the topic of distortion previously covered.
28. Find a map in the textbook. Use an opaque projector to project the same map onto the wall screen. Create a scale for the projected map, assuming the map in the book was an inches-to-miles scale.
29. Create a treasure map which relies on the pupils' abilities to use map scale.
30. Create a learning station on map scale (See Godfrey, 1973).
31. Remember to pose some map scale problems in metric terms.
32. Determine the road distance between two cities. Then

determine the air distance between the same two cities. What other factors are involved in determining the travel time via air versus via car?

33. Using the United States outline map on the blacktop,
    a. Measure the length of the student's foot on the scale of miles. Record the number of miles that the foot equals. Measure distance by having the student place one foot ahead of the other. Count the number of steps that the child takes, total them and multiply by the length of the child's foot in miles. In this manner, the length and breadth of the United States, a particular state, the distance between states or the distance between cities can be computed.
    b. Use a piece of cord or tape. Mark it off in feet or inches in accord with the map scale. Measure distances between two points on the map by holding the cord taut. Have students use computations to find the distance in miles and keep their own records.
34. Have the students plan a trip. Using the list of places which they wish to visit, the students can use the map scale to determine distances between each pair of places and the total distance to be traveled round-trip.
35. Using a sports team's or celebrity's schedule, the student can calculate the straight-line distances. In an energy-conservation age, the student might consider means of reducing the miles covered by revising the schedule.
36. Advanced students may be introduced to the representative fraction scale (ratio scale).
37. Using the paper rules which were made for the tape, have the children measure other distances on the globe and world relief map. The teacher may determine what would be most appropriate for the class to measure.
38. Post a picture of a scenic area. Have pupils make a map of the area pictured. The map should include a key to features on the map and should be drawn to scale.
39. Using a scale of one inch equals 200 feet and a 24" x 24" piece of paper, have the children plan an ideal city (for the present and/or for the future). First, the site for the area should be drawn with topographic features (e.g., hills, water, roads, etc.) Using this site map, plan a community with a variety of dwellings.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 13

Holt Correlations: 4-4-15 & 16; 4-4-22; 5-2-3; 5-2-10

NAME________________________________

DATE________________________________

WHERE AND WHY
TEST FOR CASSETTE 13
Scale and Measurement

Required Materials: 12" sculptural relief globe; 10" strip of paper; ruler; Denoyer-Geppert Desk Activity Map 22601 (one per child)

1. Using a scale of one inch equals 500 kilometers, draw a line 2500 kilometers long:

2. If one inch equals 200 miles, how many miles would be represented by the line A to B below:

____
(put answer here)

A ———————————————— B

3. Use the globe to answer the next two questions:

   A. Find the cities of Halifax and Caracas. Halifax, Nova Scotia, is in the southeastern part of Canada. Caracas, Venezuela, is near the northern coast of South America.

   ____

   B. Find the cities of Salvador and Dublin. Salvador, Brazil, is on the east coast of South America. Dublin is in Ireland, an island west of Europe.

   ____

4. Use the Denoyer-Geppert Desk Activity Map for the next three questions:

   A. About how many kilometers is it from Detroit to Buffalo?

   ____

   B. About how many miles is it from Beloit to Tallahassee?

   ____

   C. Determine the distance from St. Louis to San Francisco using either miles or kilometers. Be sure to label your answer.

   ____

Todd School District

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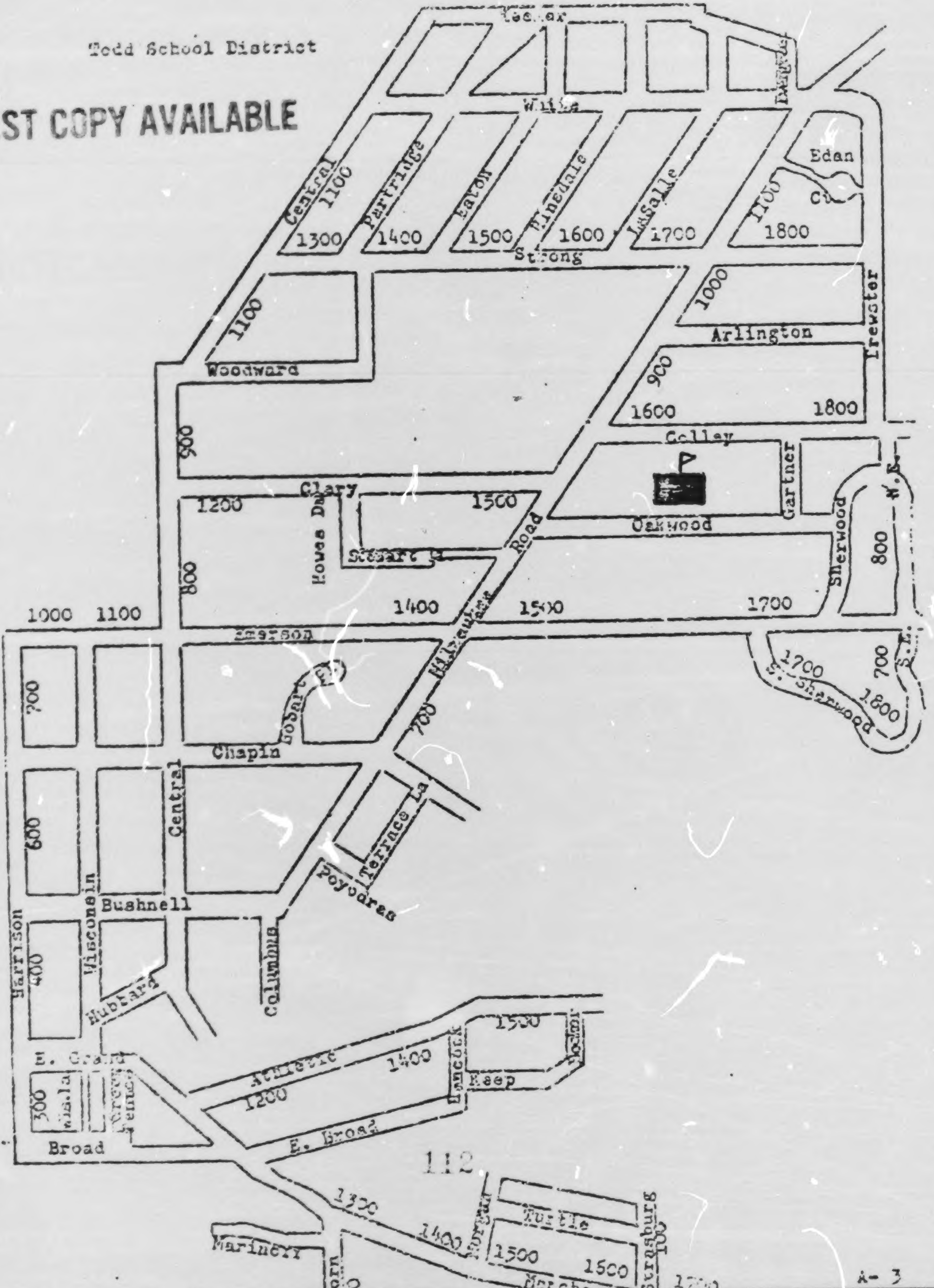
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Colley
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Clary
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Howes Dr
Stewart
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Oakwood
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Milwaukee
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Hobart
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Bushnell
Harrison
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Wisconsin
Columbus
Hubbard
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E. Broad
Broad
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Morgan
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FIFTH GRADE LESSON THREE: CONTINENTS AND OCEANS

Required Materials:
1. Tape #14
2. 12 inch sculptural relief globe
3. 22 inch graphic project globe
4. Readiness Wall Map of the World
5. World Desk Outline Map, D-9 or DD-9
6. Nyco Marker
7. Chalk, Paper, Pencil

Behavioral Objectives:
1. Students will be able to label the seven continents and four oceans on either a nameless project globe or a world outline map.

Wisconsin Design Study Skills Correlations:
1. F-3

Extension Activities:
1. Point out the four oceans. Read or tell stories about these bodies of water, including their involvement in history. Ask questions such as these: If you wanted to get from one ocean to another, how would you go? (This should lead to a discussion of canals.) How long would it take? (This would lead to a use of map scale and a determination of means of transportation.)
2. Point out the difference between countries and continents on a globe or world map.
3. Have students locate the continents and oceans on a variety of map projections so they learn to look for coordinates rather than just shape.
4. Given a blank piece of paper, have pupils draw in the continents and oceans in their proper location relative to each other and with as much accuracy as possible in terms of appearance.
5. Orient students to continents by discussing the theory of continents splitting off from one big one. Read a story and/or description of each continent and have students try to guess which continent is being described.
6. Read a story and/or a description of each ocean and have students try to guess which continent is being described.
7. Arrange continents in order of size with the largest first.
8. Put oceans in alphabetical order. Do the same for the continents.
9. Have each child take a ball of clay and mark in the equator, the North and South Poles, and the great circle going through the Prime Meridian. Then have the children sketch in with a marking stick the outline of the seven continents.

10. Have the students make up riddles. For example, "I am thinking of a continent that is shaped something like a carrot. Which continent is it?" When every child has made one, the class can divide into two teams and have a contest.
11. GAME: Twenty Questions
One of the children will select an ocean or continent with the help of a globe if necessary. The child then responds to questions from the other members of the class. These questions must be phrased so that they can only be answered with a "yes" or "no". The first ten questions must be other than straight guesses as to the name of the ocean or continent. This is to assure that the children begin to think of aspects of the oceans or continents which are distinctive. After the tenth question, students may attempt to name the ocean or continent.
12. Make a simple globe by pasting strips of paper on a balloon. Have students draw and color in the continents and oceans, emphasizing size and shape.
13. A worksheet could be made incorporating some or all of the following questions:
    a. Which two continents make up Eurasia?
    b. What is the name of the largest continent?
    c. Which continent is larger, South America or Africa?
    d. Which continents are touched by the Indian Ocean?
    e. Which two continents are closest to the continent of North America?
    f. What is the name of the ocean to the east of North America?
    g. What is the name of the ocean to the north of North America?
    h. What is the name of the ocean to the west of North America?
    i. What continent is the nearest western neighbor of southern Africa?
    j. What ocean is located west of Australia?
    k. Africa is south of what continent?
    l. What is the name of the continent located at the South Pole?
14. Have the students make lists of conspicuous features which could be used to recognize a continent other than its shape.
15. Let each interested pupil select a continent about which he or she would like to make an intensive study. Over a period of time, the pupil may collect items and information to be put into individual scrapebooks. (A good format is included in "A Guide to the Preparation of Written Reports for Upper Elementary Students.") Some ideas which might be included in a scrapebook approach are: pictures found in magazines and newspapers, clippings from newspapers and magazines,

pamphlets secured by writing the country's embassy, coins and stamps, and original stories and poems.

16. A foreign food day can be held with food based on recipes from as many continents as possible represented.
17. Have the students make continent flash cards for further practice in their memorization.
18. Include the names of the oceans and/or continents on weekly spelling lists.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 14

Holt Correlations:
1-December 4; 1-February 2; 1-February 5; 5-4-1

Name____________________

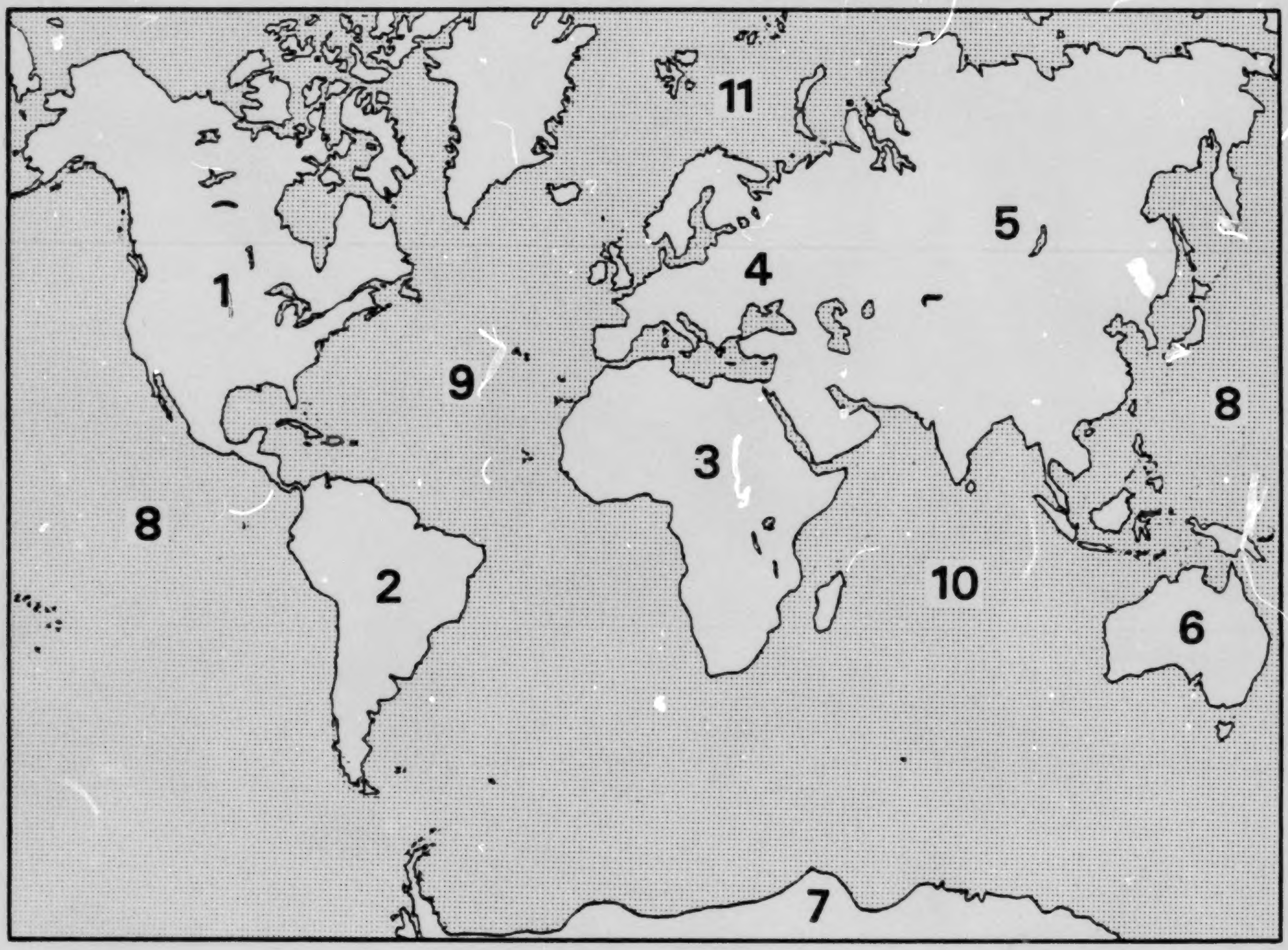
Date____________________

Required materials: none

WHERE AND WHY

TEST FOR CASSETTE 14

Continents and Oceans



Each number on the map above stands for a continent or an ocean. Write the name of the continent or ocean beside the same number below.

1 North America

2 South America

3 Africa

4 Europe

5 Asia

6 Australia

7 Antarctica

8 Pacific Ocean

9 Atlantic Ocean

10 Indian Ocean

11 Arctic Ocean

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FIFTH GRADE LESSON FOUR: ELEVATION, PART ONE

Required Materials:

1. Tape #15
2. 28" x 18" raised relief U.S. map
3. Map Symbols and Geographic Concepts Charts 27, 43, and 44
4. Nyco Marker

Behavioral Objectives:

1. Given selected places on a relief map, students will specify the upper and lower limits of elevation for the color interval in which each place is located.

Wisconsin Design Study Skills Correlations:

1. F-3

Extension Activities:

1. See suggestions under Part Two

Reference Materials:

1. See Part Two suggestions.

Holt Correlations:

1. See correlations under Part Two

FIFTH GRADE LESSON FOUR: ELEVATION, PART TWO

Required Materials:
1. Tape #16
2. 28" x 18" raised relief map of U.S.
3. Sculptural Relief Wall Map of U.S. with name overlay
4. Map Symbols and Geographic Concepts Charts 44 and 45
5. Nyco Marker

Behavioral Objectives:
1. Given selected sites located between adjacent colors on a relief map, students will specify the exact elevation of each site.
2. Given selected sites on a relief map, students will demonstrate their ability to read the symbol for a peak and specify its exact location.

Wisconsin Design Study Skills Correlations:
1. F-3

Extension Activities:
1. Create a learning station on relief maps (See Godfrey, 1973).
2. From photos and other information of an area, students can color in a simple map of the area using the International Color Code.
3. Based on the relief map legend, students should be able to identify the elevation of specific cities.
4. Ask students how rivers can serve as a key to determination of the relative elevation of different areas.
5. Prepare a bar graph to represent the elevations of different Wisconsin or world cities.
6. Compare highway road maps from various states with relief maps of those states. What patterns in highway construction become apparent based on the elevation of the area?
7. The following charts from Map Symbols and Geographic Concepts Charts and their related activities (found on the back of the charts) could be used with this lesson: Charts 20 and 21.
8. A comparison of elevations may be made with such questions as:
    a. Which city is on higher land: Chicago or Salt Lake City?
    b. Are the mountains along the coast of California higher or lower than the Sierra Nevade?
    c. In what part of Missouri is the land the highest? What is the name of this highland? (Ozark Plateau)
    d. Is the land of Florida higher or lower than most of the land of Illinois?
9. Model relief maps can be made in several different ways. The following are some different recipes which could be used for this purpose:

a. Paste and Paper: Tear paper towels or newspapers into $1\frac{1}{2}$ inch pieces. Put paste on one piece at a time, wad it or shape it with your fingers and stick it on the map outline. Build up hills and mountains as desired. Paint with tempera paint after the paste has dried.
b. Salt and Flour: Mix equal parts of salt and flour, using only enough to hold the ingredients together. Apply to map outline, modeling the terrain according to plan. Keep out of humid places because salt attracts moisture.
c. Plaster and Sawdust: Mix one pint of plaster, one pint of sawdust and a quarter pint of paste that has been dissolved in water. Knead and apply to map outline. Paint after the mixture has set for 15 to 30 minutes.
d. Plastic Starch and Detergents: Mix one part plastic starch with four parts detergent. Beat mixture until it is fluffy and apply to map outline. Be careful of the surface because it crumbles easily.

10. Have students make a large clay model of a mountain. When sliced into layers of the same thickness, the cuts would show on the surface as contour lines.
11. After students have found the elevation of cities on the U.S. raised relief map for which exact elevations can be specified, have the students compare these elevations with those for mountains such as Mt. Whitney (California), Mt. Hood (Oregon) and Mt. Rainier (Washington).
12. A worksheet could be made incorporating some or all of the following questions:
    a. What color is used to show the ocean on a physical map?
    b. What colors are used to show the lowest elevation and the highest elevation?
    c. Is Denver, Colorado, or Chicago, Illinois, on land of higher elevation?
    d. Is the land elevation higher in the eastern or western part of the United States?
    e. Are the Rocky Mountains of the United States higher than the Ozark Upland?
    f. The highest mountains of the world are found in Central Asia. What is their name?
    g. Are higher mountains found in Australia or China?
    h. What is the name of the highest mountains in Western Europe?
    i. Arrange these three mountain peaks in order of their height from lowest to highest: Mt. Woodroffe (Australia), Mr. Kilimanjaro (Tanzania, Africa), and Mt. Everest (in the Himalayas of Asia).

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassettes
15 and 16

Holt Correlations:
5: 5-9; 7-8
6: 4-3, 4, and 5; 4-7, 8 and 9; 8-13

Name ______________________________

Date ______________________________

Required materials: Raised Relief U.S. Map (28" x 18")

WHERE AND WHY

TEST FOR CASSETTES 15-16

Elevation

Use the raised-relief map of the United States to answer the questions below. Write your answers in the large blanks.

1. Find Dodge City, Kansas. Dodge City is at 38° north latitude and 100° west longitude.

   The elevation of Dodge City is between___and___feet.

   1,000 and *3,000*

2. Find Alamogordo, New Mexico. Alamogordo is at 33° north latitude and 106° west longitude.

   The elevation of Alamogordo is between___and___feet.

   5,000 and *10,000*

3. Find Santa Rosa, near the California coastline. Santa Rosa is near 38° north latitude. What is Santa Rosa's *exact* elevation?

   500 feet

4. Find Odessa, Texas. Odessa is near 32° north latitude and 102° west longitude. What is Odessa's *exact* elevation?

   3,000 feet

5. Find Pikes Peak in Colorado. Pikes Peak is at 39° north latitude and 105° west longitude. What is the *exact* elevation of Pikes Peak?

   14,110 feet

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FIFTH GRADE LESSON FIVE: RIVERS

Required Materials:

1. Tape #17
2. 28" x 18" raised relief U.S. map
3. Readiness Wall Map of World
4. Map Symbols and Geographic Concepts Charts 43 and 44
5. Nyco Marker

Behavioral Objectives:

1. Students will identify upstream as a direction opposite the flow of a river and downstream as a direction with the flow of a river.
2. Students will identify the source of a river as the point at which it begins and the mouth as the point at which it ends.
3. Given a relief map and selected rivers, students will use the map's color intervals to determine the direction of flow for each river.
4. Given a political map and selected rivers, students will use the arrowhead shape of each river's confluences to determine its direction of flow.

Wisconsin Design Study Skills Correlations:

1. F-3

Extension Activities:

1. Students will study various political maps and note how often and where the river serves as a political boundary.
2. Point to rivers on maps. Read or tell stories about these rivers, including their roles in history.
3. Point to examples of deltas without using or defining the term. Ask pupils how these land additions were constructed.
4. When a child locates a river on a map, he or she should be required to trace its entire length.
5. In locating and tracing a river, a student might be asked questions such as these:
   a. In what direction does the river flow? Encourage pupils to use elevation as a key in determining this answer.
   b. What is the source of the river? Does it rise in the mountains? Does it carry the overflow from a lake? Is it formed by the joining of several rivers?
   c. Where does the river end? Does it flow into another river, into a lake, into a bay, or into the ocean?
   d. About how long is the river?
6. On a blank map, students can represent rivers by pasting on blue yarn corresponding to the route of the river.
7. Using the United States outline map on the blacktop, pupils can play the following game-like activity:

   a. A set of cards is made, each naming a particular river that has been represented on the map according to the directions in number 8. below.
   b. One player from a team selects a card. Within a restricted amount of time, the students is to hop to any part of the river named on the card, place the card on the river and skip back to his/her group.

8. Have children use blue colored strips of paper and place the strips appropriately on the outline map on the blacktop.
9. Another game using the blacktop U.S. map includes spelling practice. All or an assigned number of students are allowed to run to any river represented as a result of number 8. above. They are then called upon one at a time to spell the name of the river that they are standing next to on the map.
10. Categorize all rivers that can be located by their source. If students have difficulty locating the sources, suggest that the easiest way to find out where a river begins is to find out where it ends and then trace it upstream from the mouth to the source.
11. Using a variety of river maps, have the children find examples of the following:
    a. Rivers that begin in very high mountains
    b. Rivers that flow between mountain ridges
    c. Rivers that make large bends
    d. Rivers that flow eastward, northward, westward, southward
    e. Rivers with many tributaries
    f. Rivers that have built deltas
12. Have each child choose a river and tell the following things about it:
    a. Where does the river begin
    b. What direction does it flow
    c. The names or number of tributaries
    d. The body of water into which it flows
    e. Any large cities on its route or at its mouth
    f. How it begins (e.g., as mountain runoff)
    g. Other distinguishing features
13. Using a map of Africa, have the children locate the Nile, the Niger, and the Congo. Have them trace each of these rivers from its source, or the source of one of the main tributaries, to the mouth. What are the major characteristics to be noted? (Example: Nile--flows north, two large tributaries, the location of Cairo, the delta with many streams that fan out across it)
14. The following charts from Maps Symbols and Geographic Concepts Charts and their related activities found on the back of the charts could be used with this lesson: 5 and 6.

15. A worksheet could be made incorporating some or all of the following questions:
    a. What is the name of the Canadian province where the source of the Columbia River is located?
    b. What Missouri city is located near the mouth of the Missouri River?
    c. What is the name of the mountains in Colorado in which the source of the Colorado River is located?
    d. What is the name of the longest tributary of the Mississippi River?
    e. Why is the Ob River, just east of the Ural Mountains in the Soviet Union, not favorably located for transportation?
    f. Do Poland and Germany in Central Europe or Algeria and Libya in Northern Africa have more rivers?
    g. Which continent has the fewest rivers: Australia or Antarctica?
    h. What is the name of the river in Central Europe that is a natural transportation route running east and west?
    i. What city is located near the mouth of the Indus River?
    j. Many of the largest cities are located near the mouth of navigable rivers. Near the mouths of what rivers are these cities located: Shanghai, Chicag; Saigon, Vietnam; Alexandria, United Arab Republic; and New Orleans, Louisiana?
16. Using a map of Europe, have the children contrast the long rivers of the east, such as the Volga, with the short but important rivers in the west, such as the Oder, Rhine, and Seine.
17. Based on the Wisconsin map of Major Urban Centers which immediately follows this lesson, what are some summary statements that can be made relative to the influence of rivers on these centers? Have the students use other references to name the rivers indicated on the map. Are any smaller, but significant rivers missing from the map?
18. Using the Todd District map following this lesson, answer these questions:
    a. Which point is at a higher elevation point: A or B?
    b. Which point is at a higher elevation point: E or F?
    c. Which point is at a higher elevation point: C or D?
19. Using the Beloit city map which follows this lesson, ask such questions as:
    a. Which point is at a higher elevation: A or B?
    b. Which point is at a higher elevation: D or H?
    c. Which point is at a higher elevation: E or G?
    d. Which general direction are the rivers (one is actually a creek) flowing in this case? (southward)
    e. Are there any significant features to be noted about the rivers?

20. Using the Wisconsin map which follows this lesson, ask questions such as the following:
    a. How many rivers on this map flow north? (one)
    b. Which point is at a higher elevation: F or G?
    c. Which point is at a higher elevation: A or B?
    d. Into what body of water do most of the Wisconsin rivers flow? (Mississippi)
    e. From another reference source, add the Rock River.

21. GAME: Be Lucky

The purpose of this game is to locate the important rivers and mountains of the world.

Materials: a pair of colored cardboard squares (say blue and red) to use as markers and a series of four-leaf clovers with the names of mountains and rivers placed on them. The clovers can be drawn on the board or a chart or they may be placed on hooks on the bulletin board.

Procedure: The group is divided into two teams, the Reds and Blues for example. The Reds start on one of the squares marked "Start" and the Blues start on the other "Start" square. The teams work their ways towards each other. The object of the game is to collect clovers. The one with the most clovers will win. The teams take turns moving one space at a time if the player moving can answer the question that is on the next clover. If the question cannot be answered, no move occurs. One team cannot move to a clover already occupied by another team. Each clover has the name of a river or mountain printed on it and the team member must name the country where it is found (of continent to correlate with lesson 14). Team members may consult with each other, but only one answer will be accepted.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 17

Holt Correlations:
3: 2-21; 3-8; 3-12; 3-15,16 and 17; 7-6
4: 7-3 & 4
5: 4-6
6: 9-1

Name ______________________________

Date ______________________________

WHERE AND WHY

TEST FOR CASSETTE 17

Rivers

Required materials: Raised Relief U.S. Map (28" x 18"); Readiness Wall Map of World

Use the United States map to answer the questions below. First find the Colorado River, in *Texas.* The Colorado River crosses the line at 30° north latitude.

1. Does the Colorado River flow northwest or southeast?

   southeast

2. Find the city of Lamesa, next to the Colorado River. Is Lamesa closer to the river's *mouth,* or closer to its *source?*

   source

3. Find the city of Big Spring, next to the Colorado River. Is Big Spring *upstream* or *downstream* from Lamesa?

   downstream

4. At what body of water does the Colorado River end?

   Gulf of Mexico

Use the world map to answer the questions below. First find the Nile River in northeast Africa.

5. Does the Nile River flow north or south?

   north

6. Find the city of Cairo, on the Nile River. Is Cairo near the river's *source,* or near its *mouth?*

   mouth

7. Find the city of Khartoum, on the Nile River. Is Khartoum *upstream* or *downstream* from Cairo?

   upstream

8. At what body of water does the Nile River end?

   Mediterranean Sea

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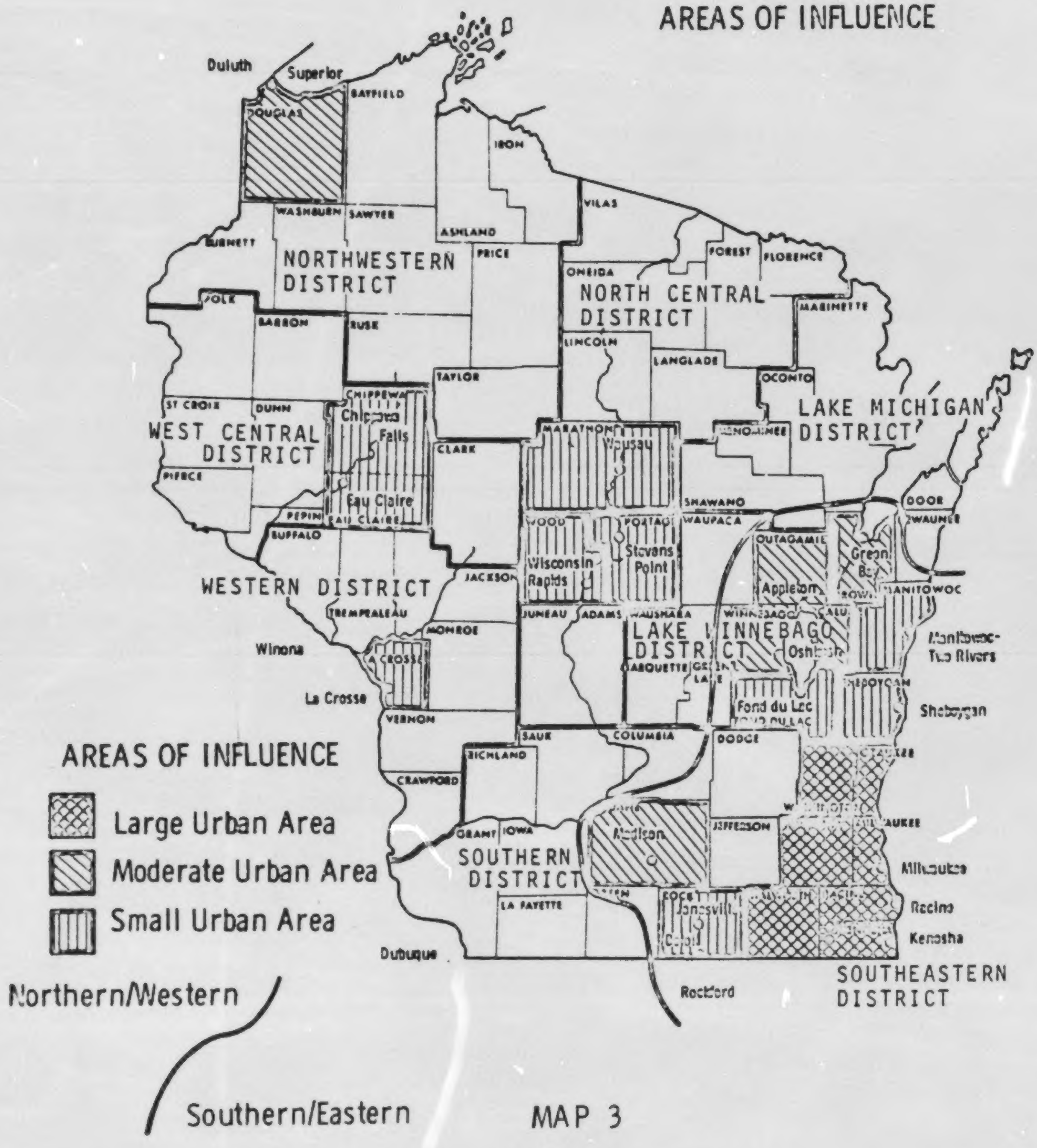
WISCONSIN

MAJOR URBAN CENTERS & AREAS OF INFLUENCE


Duluth
Superior
DOUGLAS
BAYFIELD
IRON
VILAS
ASHLAND
WASHBURN
SAWYER
BURNETT
NORTHWESTERN DISTRICT
PRICE
ONEIDA
FOREST
FLORENCE
NORTH CENTRAL DISTRICT
MARINETTE
POLK
BARRON
RUSK
LINCOLN
LANGLADE
OCONTO
TAYLOR
ST CROIX
DUNN
CHIPPEWA
Chippewa Falls
LAKE MICHIGAN DISTRICT
WEST CENTRAL DISTRICT
MARATHON
Wausau
MENOMINEE
PIERCE
CLARK
Eau Claire
EAU CLAIRE
PEPIN
SHAWANO
DOOR
WOOD
PORTAGE
WAUPACA
KEWAUNEE
BUFFALO
OUTAGAMIE
Wisconsin Rapids
Stevens Point
Green Bay
JACKSON
WESTERN DISTRICT
Appleton
BROWN
MANITOWOC
TREMPEALEAU
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
LAKE WINNEBAGO DISTRICT
Oshkosh
Manitowoc-Two Rivers
Winona
MONROE
LA CROSSE
MARQUETTE
GREEN LAKE
La Crosse
Fond du Lac
FOND DU LAC
SHEBOYGAN
Sheboygan
VERNON
SAUK
COLUMBIA
DODGE
OZAUKEE
RICHLAND
CRAWFORD
WASHINGTON
JEFFERSON
WAUKESHA
MILWAUKEE
GRANT
IOWA
DANE
Madison
SOUTHERN DISTRICT
Milwaukee
GREEN
ROCK
Janesville
Beloit
WALWORTH
RACINE
Racine
KENOSHA
Kenosha
LA FAYETTE
Dubuque
Rockford
SOUTHEASTERN DISTRICT
AREAS OF INFLUENCE
Large Urban Area
Moderate Urban Area
Small Urban Area
Northern/Western
Southern/Eastern

MAP 3

Todd School District

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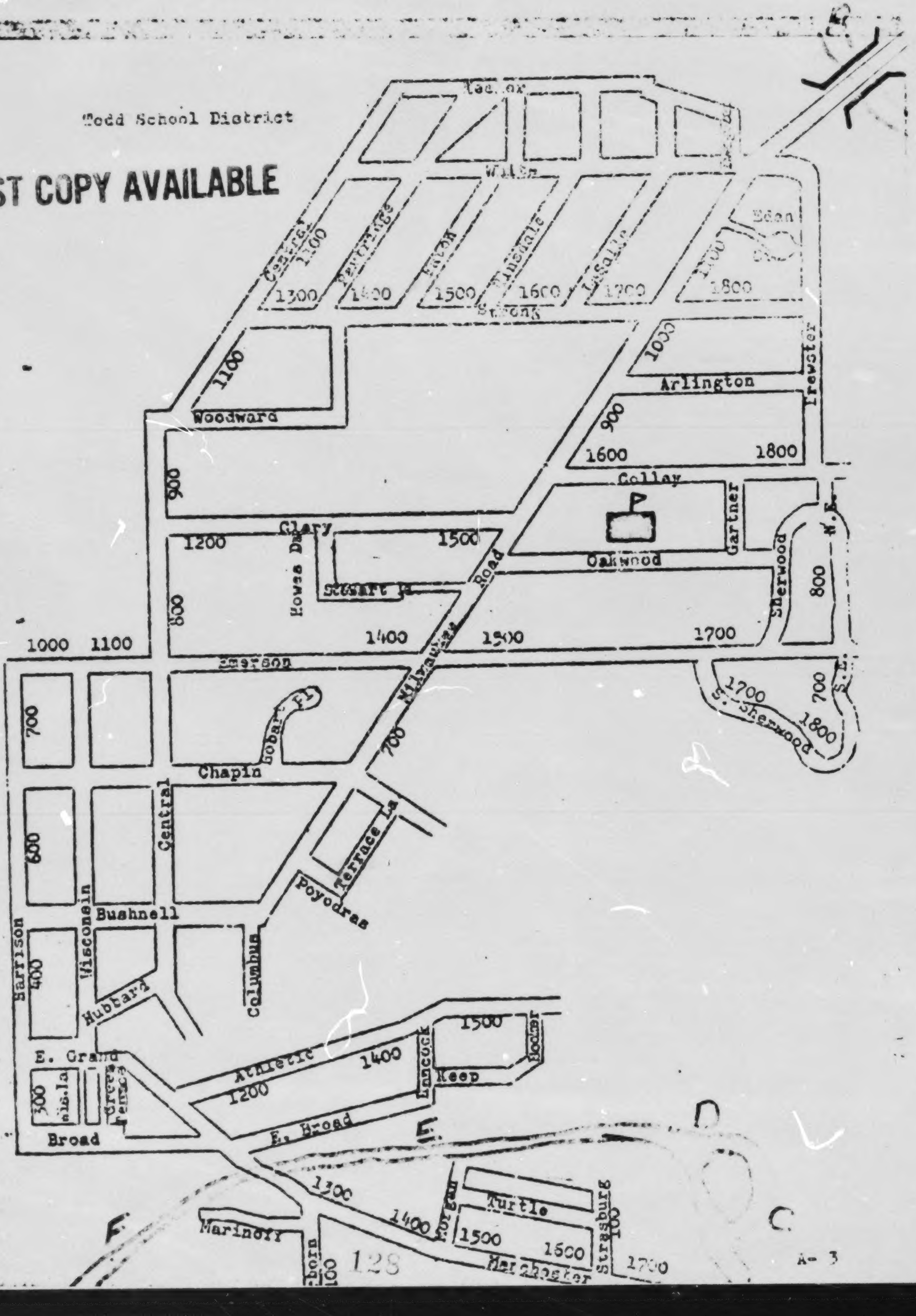
Woodward
Arlington
Collay
Oakwood
Gartner
Sherwood
Brewster
Eden
Strong
Clary
Stewart Pl
Howse Dr
Emerson
Milwaukee Road
Hobart Pl
Chapin
Central
Terrace La
Poyodras
Bushnell
Wisconsin
Harrison
Hubbard
Columbus
E. Grand
Athletic
Lancock
Keep
Boomer
Broad
E. Broad
Turtle
Marinoff
Manchester
Strasburg
S. Sherwood
N. E.
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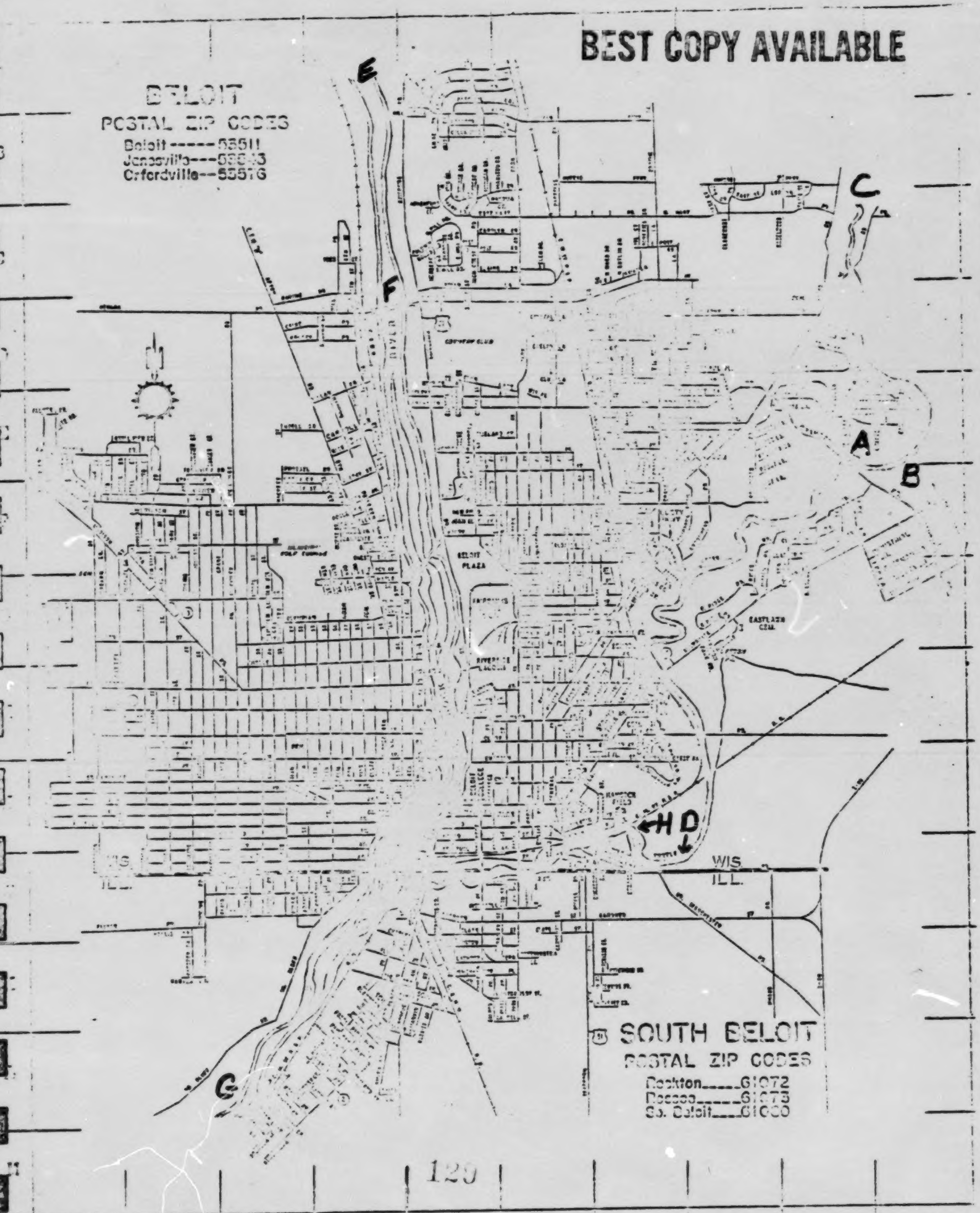
BELOIT
POSTAL ZIP CODES
Beloit------53511
Janesville---53543
Orfordville--53576
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COUNTRY CLUB
BELOIT PLAZA
EASTLAWN CEM.
RIVERSIDE LAGOON
H
D
WIS.
ILL.
WIS.
ILL.
G
SOUTH BELOIT
POSTAL ZIP CODES
Rockton_____61072
Roscoe______61073
So. Beloit____61080

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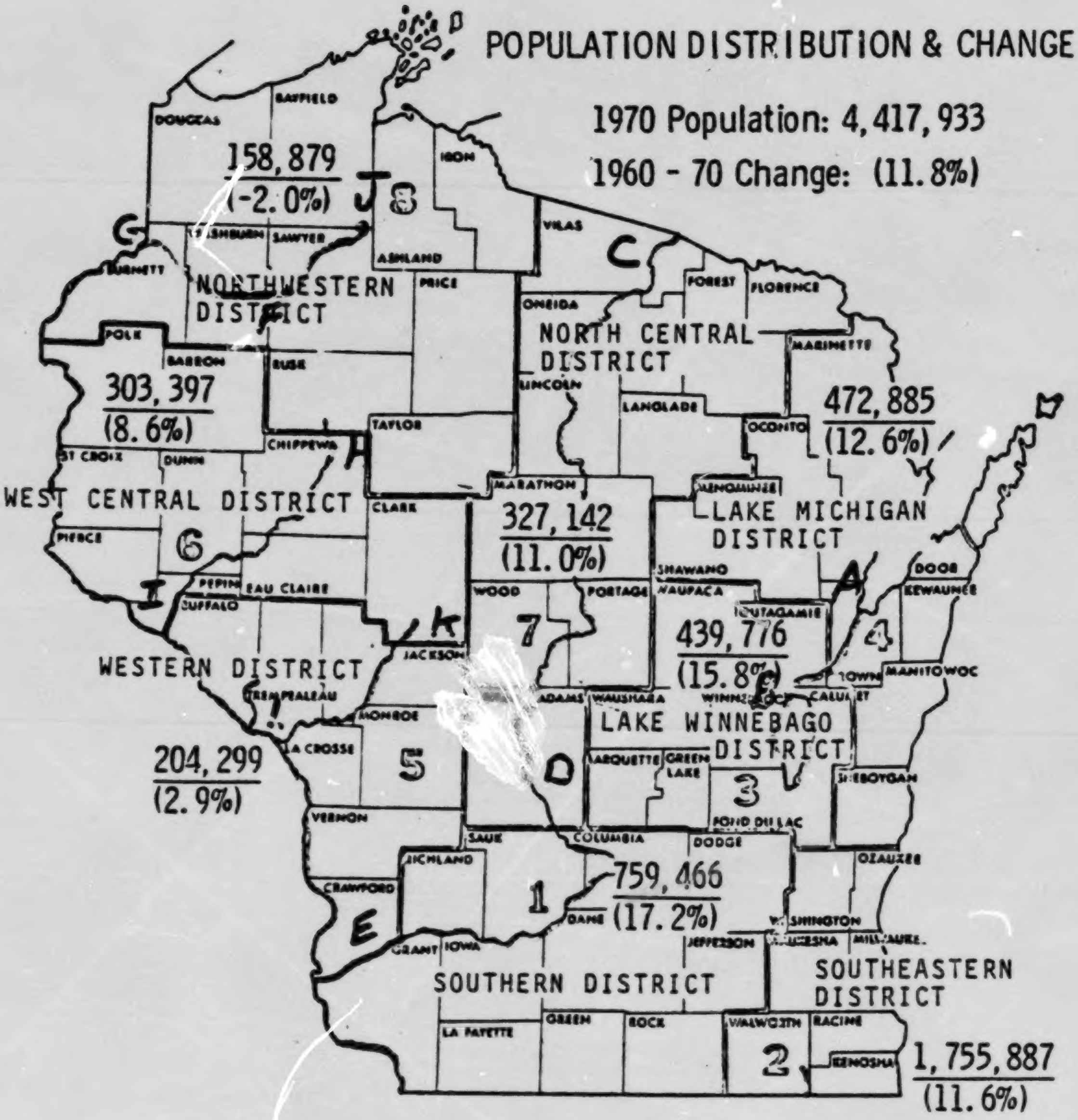

WISCONSIN

POPULATION DISTRIBUTION & CHANGE

1970 Population: 4,417,933

1960 - 70 Change: (11.8%)

DOUGLAS
BAYFIELD
IRON
158,879
(-2.0%)
J
8
VILAS
C
G
WASHBURN
SAWYER
ASHLAND
BURNETT
NORTHWESTERN DISTRICT
PRICE
ONEIDA
FOREST
FLORENCE
NORTH CENTRAL DISTRICT
POLK
BARRON
RUSK
MARINETTE
303,397
(8.6%)
LINCOLN
LANGLADE
472,885
(12.6%)
TAYLOR
OCONTO
ST CROIX
DUNN
CHIPPEWA
H
MARATHON
MENOMINEE
WEST CENTRAL DISTRICT
CLARK
327,142
(11.0%)
LAKE MICHIGAN DISTRICT
PIERCE
6
SHAWANO
I
PEPIN
EAU CLAIRE
WOOD
PORTAGE
WAUPACA
A
DOOR
KEWAUNEE
BUFFALO
7
OUTAGAMIE
K
439,776
(15.8%)
4
JACKSON
BROWN
MANITOWOC
WESTERN DISTRICT
TREMPEALEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
MONROE
LAKE WINNEBAGO DISTRICT
204,299
(2.9%)
LA CROSSE
5
D
MARQUETTE
GREEN LAKE
3
SHEBOYGAN
VERNON
FOND DU LAC
SAUK
COLUMBIA
DODGE
RICHLAND
1
759,466
(17.2%)
OZAUKEE
CRAWFORD
DANE
WASHINGTON
E
GRANT
IOWA
JEFFERSON
WAUKESHA
MILWAUKEE
SOUTHERN DISTRICT
SOUTHEASTERN DISTRICT
LA FAYETTE
GREEN
ROCK
WALWORTH
RACINE
2
KENOSHA
1,755,887
(11.6%)

MAP 1

SOURCE: Wisconsin Bureau of Planning and Budget,
Wisconsin Profile Series-Population, April 1971.

FIFTH GRADE LESSON SIX: BOUNDARIES AND CITIES

Required Materials:
1. Tape #18
2. Readiness Wall Map of the United States
3. Readiness Wall Map of the World
4. Map Symbols and Geographic Concepts Chart #44
5. Nyco Marker

Behavioral Objectives:
1. Students will distinguish on a map between the symbol for an international boundary and the symbol for a state or provincial boundary.
2. When shown specific boundaries on a map, students will state whether each boundary follows: 1) a natural feature, 2) a man-designated line, or 3) both a natural feature and a man-designated line.
3. Given a list of cities and a United States political map that classifies population size with city symbols, students will use the map legend to derive the population classification of each city.
4. Students will use the symbolism in a map legend to identify the capital cities of specified states or countries.

Wisconsin Design Study Skills Correlations:
1. G-1

Extension Activities:
1. Collect state highway maps from a variety of years. Have students make a list of cities which have increased in population according to their legend designation and cities which have decreased in population according to the same designation.
2. On the blacktop U.S. outline map, have students place dots on the map to represent key cities. These dots can vary in size according to a legend of city sizes which the pupils can also prepare.
3. After 2. has been done, the following game-like activity can be pursued:
   a. Create a set of cards, each listing a particular state capital or large city.
   b. The class is divided into two teams. A player from one team at a time draws a card, hops to the proper dot or star on the map, places the card on that star or dot and skips back to his/her team. All of this must be done within a restricted time limit. A point is scored for the team if the placement is correct.
4. Assuming the existence of the blacktop U.S. outline map, one person at a time can bounce a ball around the map. On each

state that the ball lands, the student must name its capital. The child keeps bouncing the ball as long as he or she can correctly name the capitals. Who can bounce the ball the most?

5. Having complete 2. above, another team-type game is possible. Members of one team pose questions one-at-a-time to members of the other team. The answer must be one of the cities or state capital shown on the map. To answer the question, the player runs and stands on the answer. If correct, his/her team receives a point. Examples: What is the capital of Florida? What is the second largest city in the nation?
6. On the blacktop U.S. outline map, write the first letter of each state capital. Divide the class into two teams, each having different color pieces of chalk. One member of each team runs to a state of his/her choice and completes the name of the capital. S/he then runs back to the team, gives the chalk to the next teammate in line who repeats the process. The team with the largest number of correct answers in its color wins.
7. Given different state maps or road maps of the same state, have the children locate all the cities possible that begin with the same letter. Then have the students group these cities according to their populations and the categories provided by the map legend.
8. Have students find one city that begins with the first letter of their first names. Have them answer questions about this city such as:
   a. What county is it located in?
   b. Is it east, west, north or south of Beloit?
   c. What lakes or rivers are near the city?
   d. What highways go through the city?
   e. What is the approximate and/or exact population of the city?
   f. What other pieces of information can you provide about this city based on the information available on the map alone?
9. Learning to Use a Map, page 11
10. On the Readiness Wall Map of the United States, have the students find four states that are bounded entirely by imaginary, man-designated lines.
11. Learning to Use a Globe 2, pages 1-4
12. Have the students gather pictures of small towns and large cities. List the differences between the two based upon the pupils' experiences and the study of the pictures.
13. The following charts from Map Symbols and Geographic Concepts Charts and their related activities found on the back of the charts could be used with this lesson: Charts 30, 31, 33, 34, and 39.

14. Use a Wisconsin state road map for this activity. Have the students use a marking pen to draw the boundary lines around the state (natural and man-made). Locate several cities or towns of their choice. Have the students connect the towns or cities via major highways and calculate the distances between them.

15. A worksheet could be made incorporating some or all of the following questions:
    a. What are the borders of your home? The children can write the homes or other property that touches theirs.
    b. What country borders Canada?
    c. What are the borders of Wisconsin?
    d. What countries and bodies of water border the 48 states? the 50 states?
    e. What are the names of the nations that border the Arctic Ocean?
    f. Which nations border Paraguay in South America?
    g. Which nation in South America has the largest number of nations bordering it?
    h. Tennessee and Missouri have more bordering states than any other state in the United States. How many states border each?
    i. What river borders Texas on the south?
    j. What river borders Kentucky on the north?

16. Each child selects a city in the state or some city that s/he has visited. The child does an in-depth investigation of this city, including writing to the city for information. (A Guide to the Preparation of Written Reports for Upper Elementary Students would be a good format to follow.) The student can prepare an oral report for the class, a bulletin board display, or a written report for the teacher.

17. Make a wooden model of a city under study (see McCrystal, et al, 1975).

18. In what other ways might a legend be created for cities than on the basis of population? Have the students research and construct legends using other means of categorizing cities on a map.

19. Make flash cards with the symbol for a city on one side and the population that symbol represents on the other side. Students can use them by themselves or in pairs during spare time.

20. GAME: Symbol Quiz
    Materials: One Wisconsin map for each (pair of) student(s)
    Procedure: The teacher says the name of a city and gives the class some help in finding it on the map. The student is to look at the symbol for that city and on paper write down the population which that symbol represents.
    Variation: The means of aiding students in locating the city could be through giving the students the city's coordinates.

21. Using a United States map, have students group all states into one of three categories: 1) states with man-designated boundaries only; 2) states with natural features only for boundaries; 3) states with a combination of natural and man-designated boundaries.

22. Comparing the appearance of man-designated versus natural boundaries, are there any conclusions possible?

23. GAME: Spot a Countary
Materials Needed: two world maps hanging on the wall
Procedures: One player writes the name of a country on the board. The other players representing their teams try to locate that country as quickly as possible. The first one to "Spot It" on the map earns a point.
Variations: Three to five players can play with the first one earning three points becoming the next caller. Rivers or world cities may be used instead.

24. Provide each pupil with pencils and a duplicated sheet with these topics at the top:
CITY STATE COUNTRY CONTINENT OCEAN
Write a series of words on the board, one at a time, allowing time for the children to write the word in the correct place on the sheet. After a number of possibilities have been presented, pupils can come to the board and indicate the proper placement of each one.

25. GAME: Map Flash
Materials: paper and pencil for each player and a set of large tagboard cards having outline maps of the United States with a different state colored on each and the name of that state and a number on the back. The teacher or a class member stands before the class and flashes the cards in the order that they are numbered to avoid later arguments. The pupils write the name of each state as it is flashed.
After all of the cards have been flashed, the papers are checked. The person with the greatest number of correct responses is the winner. On subsequent times through the cards, the order can be reversed to discourage memorization of order.

26. Have the pupils find examples of cities that are larger in area and/or population than some states. Ask them why this might have occurred.

27. Identify a few cities that are in the news headlines, discuss the issues, locate the cities on the map and speculate if there is any connection between their locations and the issues.

28. Given the symbols for a national and a state capital, have pupils give group responses to the names of capitals. For example, pupils can make a card with the symbol for each type of capital. They would then hold up the correct card when the name of a capital is given.

29. Select a large city. Examine physical maps containing the area around that city. What are some geographic advantages for the city? some geographic disadvantages that had to be overcome?
30. Following a procedure similar to that described in 28. above, students can make and respond with cards symbolizing a state or international boundary. The teacher in this instance would name pairs of states or nations.
31. Locating a city which has had a major increase or decrease in population, research to discover the reason(s) for the great change.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 18

Holt Correlations:
1: March 7; November 9; October 2, 5, and 8;
3: 2-3; 8-8 & 9; 3-7; 3-11; 2-1; 4-3 & 4; 5-4; 5-6; 5-15 & 16
5: 5-17; 5-4 & 5; 3-10 & 11; 7-1; 3-8
6: 4-10, 11, and 12; 9-13

Name ____________________

Date ____________________

Required materials: Readiness Wall Map of U.S.

WHERE AND WHY

TEST FOR CASSETTE 18

Boundaries and Cities

Use the United States map to answer the questions below. Write your answers in the large blanks.

1. Find Montana, in the northwestern part of the map. Look at the northern boundary of Montana. Is this a *state* boundary, or is it an *international* boundary?

   international

2. Find Indiana, just south of the Great Lakes. Look at the boundary between Indiana and Kentucky. This boundary

   (a) follows a natural feature
   (b) is just a line decided by man
   (c) partly follows a natural feature

   a

3. Look at the boundary between Indiana and Illinois. This boundary

   (a) follows a natural feature
   (b) is just a line decided by man
   (c) partly follows a natural feature

   c

4. Look at the boundary between Indiana and Ohio. This boundary

   (a) follows a natural feature
   (b) is just a line decided by man
   (c) partly follows a natural feature

   b

5. Find the city of Peoria, Illinois. The population of Peoria is between___and___.

   100,000 and *500,000*

6. What is the capital of Kentucky?

   Frankfort

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SIXTH GRADE LESSON ONE: DAY AND NIGHT

Required Materials:
1. Tape #19
2. Trippensee Planetarium

Behavioral Objectives:
1. Students will demonstrate their understanding of rotation and revolution by 1) correctly distinguishing between the earth's daily rotation and yearly revolution; 2) identifying the direction of the earth's rotation as eastward or counterclockwise (when viewed from the north); 3) identifying the direction of the earth's revolution as counter clockwise (when viewed from the north).
2. Students will identify the earth's rotation as the cause of day and night, sunrise and sunset.

Wisconsin Design Study Skill Correlation:
1. G-1

Extension Activities:
1. Use the classroom clock as a clue to the earth's rotation.
2. Discuss how the amount of light in a room is dependent on the position of the windows in the room in relation to the sun.
3. To demonstrate the cause of day and night, the following procedure could be used:
    a. Darken the room, if feasible, to make the distinction between the light and dark halves of the globe more distinct.
    b. Have a child hold a flashlight in a stationary position to represent the sun. Direct the beam of light toward the equator.
    c. Note that one-half of the globe is lighted. Explain that this side is having day and the other side is having night.
    d. Rotate the globe slowly from west to east (counter clockwise).
    e. Notice that a certain point (previously marked) is just coming into the light. Explain that it is sunrise for that point. When that point is directly in line with the center of the beam of light (or when the sun is shining directly on it), it is noon. It is sunset for that point when it passes into the shadow.
4. Make a little flag with a matchstick and paper. Put a little clay around the bottom of the matchstick. Have a child fasten this on the globe to show where you live. Using a procedure similar to the above, have the children tell how

much of the world is having daylight and how much is having darkness. Rotate the globe slowly watching for the flag that stands for the place where you live. Have the children identify when dawn, noon and twilight would come to their home.

Reference Materials:

Criterion-Referenced Test: Where And Why Test for Cassette 19

Holt Correlations:

WHERE AND WHY

TEST FOR CASSETTE 19

Day and Night

Name ______________________________

Date ______________________________

Required materials: none

Write your answers in the large blanks.

1. The movement of the earth as it turns in place is called___.

rotation

2. The movement of the earth around the sun is called___.

revolution

3. The earth rotates toward the
   (a) north
   (b) east
   (c) west

b

4. Imagine you are looking down at the earth from the north. Does the earth revolve in a *clockwise* or *counterclockwise* direction?

counterclockwise

5. Which movement of the earth causes day and night: rotation or revolution?

rotation

6. How long does it take the earth to complete one revolution?

about 365 days, or one year

7. How long does it take the earth to complete one rotation?

24 hours, or one day

8. Sunrise and sunset are caused by
   (a) the earth's rotation
   (b) the movement of the sun
   (c) the earth's revolution

a

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SIXTH GRADE LESSON TWO: SEASONS

Required Materials:

1. Tape #20
2. Trippensee Planetarium

Behavioral Objectives:

1. Students will define the earth's axis as an imaginary north-south line through the center of the earth.
2. Students will state that seasonal changes are caused by the earth's inclination and revolution. They will demonstrate their understanding of these phenomena in the Northern Hemisphere by identifying: 1) summer as the season the North Pole tilts toward the sun; 2) autumn as the season the North Pole begins to tilt away from the sun; 3) winter as the season the North Pole tilts away from the sun; 4) spring as the season the North Pole again begins to tilt toward the sun.

Wisconsin Design Study Skills Correlations:

1. G-1

Extension Activities:

1. Use the following dates and descriptions for a matching exercise:

a. June 22	North Pole tilted toward the sun.
b. September 22	North Pole tilted neither toward nor away from the sun.
c. December 22	North Pole tilted away from the sun.
d. March 21	North Pole tilted neither toward nor away from the sun.

   As a further extension, diagrams could also be correlated with the dates and descriptions.

2. To get some idea of how the earth moves in two ways at the same time, try the following: On a table, place a reading lamp (without the shade) to stand for the sun. Around the reading lamp, draw a line with chalk to stand for the earth's orbit. Move the globe along the chalk line around the lamp. At the same time. rotate the globe on its axis. (A student could do this.) Have the class answer such questions as the following:
   - a. How long does it actually take the earth to make one complete turn on its axis?
   - b. How long does it actually take the earth to make one complete trip around the sun?
   - c. How many times does the earth rotate during the time that it takes to make one trip around the sun?
   - d. When is it: summer, autumn, winter, spring?

4. Use Why We Have Seasons (Instructo)--nonconsumable classroom quantities are located in 112 file.

3. Make mosaic maps. Landscape colors of North America in each of the four seasons can be an enjoyable and worthwhile activity if sufficient research is done to determine the average weather and climatic conditions in each of these four months: March, June, September, and December. Students should plan their own materials and methods. Such a map could start with a rather large outline map of North America, on which white triangles may be pasted, one overlapping another, to represent snowcovered mountains; dark green triangles for trees; brown, yellow or green squares for fields or pastures; red, yellow or purple circles for fruit; pink or lavendar circles or fancy shapes for flowers, etc. Strips of gummed tape may be colored or painted and applied as needed.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 20

Holt Correlations:

WHERE AND WHY

TEST FOR CASSETTE 20
Seasons

Name ______________________________

Date ______________________________

Required materials: none

Write your answers in the large blanks.

1. Which movement of the earth affects seasonal change: rotation or revolution?

revolution

2. Seasonal change also is affected by the

   (a) earth's changing distance from the sun
   (b) tilt of the earth's axis

b

3. The earth's axis is

   (a) an imaginary east-west line through the center of the earth
   (b) an imaginary north-south line through the center of the earth
   (c) a steel pin that sticks out from the poles

b

Questions 4-7 refer to the Northern Hemisphere. Write your answers in the large blanks.

4. When the North Pole is tilted *toward* the sun, it is

   (a) summer
   (b) fall
   (c) winter
   (d) spring

a

5. When the North Pole is tilted *away* from the sun, it is

   (a) summer
   (b) fall
   (c) winter
   (d) spring

c

6. In spring, does the North Pole begin to tilt *toward* the sun, or *away* from the sun?

toward

7. In autumn, does the North Pole begin to tilt *toward* the sun, or *away* from the sun?

away

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SIXTH GRADE LESSON THREE: TIME

Required Materials:

1. Tape #21
2. 12 inch sculptural relief globe
3. Nyco Marker
4. Pencil and Paper

Behavioral Objectives:

1. Given the number of degree and hours required for one complete rotation, students compute the number of degrees of longitude through which the earth rotates in one hour or more.
2. Given a world map or a globe, and the time at one location, students compute the time at other selected locations.
3. Given the time at one location as a reference, students use the time dial on a globe to find the time at other selected locations.

Wisconsin Design Study Skills Correlations:

1. G-2

Extension Activities:

1. Learning to Use a Globe 2, pages 18-22.
2. Learning to Use a Map, pages 38-40.
3. Using the blacktop outline map of the United States (see Knutson, 1975):
   a. Show time zone boundaries on the map using brightly colored yarn. Place prepared identification signs in each zone.
   b. Place a student-constructed cardboard clock in the eastern time zone. Set it for a specific time. Pupils must then determine what time it is in each of the other time zones. The same procedure can be followed with the clock being placed in other time zones.
   c. Have students simulate different means of transportation and create problems based on their movement on the map.
4. Pose problems for pupils involving three pieces of information: average speed of vehicle, direction and number of time zones crossed, and distance traveled between two named location.
5. Ask students to speculate on the origin of time zones. Tell students to consider problems that would result without the zones. What problems are created by the zones?
6. Have students identify the time zones on a U.S. or world map by coloring in the zones or boundaries to them.
7. Have the pupils attempt to coordinate schedules (bus or plane) as well as telephone calls.

8. Using news headlines, identify the time zones in which events occurred. Discuss the way in which the time zones affect news coverage as well as international reactions to newsworthy events.

9. Set up situations in which students have to figure out why the world developed the International Date Line. For example, ask what problems might arise if the countries did not agree to the creation of such a line.

10. Tracing the travel patterns of sports teams or persons, consider what time changes are encountered.

11. GAME: WHICH TIME ZONE?

Materials: A large United States Map with the time belts clearly marked. Display the map for several days prior to the game. Pupils will also need sheets of paper and a pencil.

Procedure. Tell the students that they are going to play a game about the time zones of the United States when the map is first displayed so that they can study it in advance. On the day of the game, the pupils fold a piece of paper so four columns are created. Have them label the columns with each of the four main U.S. time zones: Eastern, Central, Mountain, and Pacific. (If desired, a fifth column can be created for Hawaii and Alaska.) Call out the names of ten cities. Tell the students to place the name of each city in the column to which they think it belongs. Award one point for each correct placement. All who make ten points might be rewarded by being allowed to place their names on the original time belt map or by receiving extra credit points in social studies.

Variation: For an advanced group the teacher may call out the name of a city and give the time in that city. Then the group would be asked to write the times of the other cities named in other zones or the same zone. For example: It is eight o'clock in Chicago, Illinois. What time is it in Monterey, California?

12. GAME: SET YOUR CLOCK

Materials: Two carboard clock faces with movable hands; map of the United States with time zones indicated; a list of questions and answers on the time zones prepared by the teacher or a student committee

Procedure. Select a leader (or have pupils take turns). Divide the rest of the class into two teams. The leader holds the list of questions and stands facing the two teams.

The first player on each team stands before his team's clock face. The leader poses the question, "It is 6:00 A.M. in New York City. What time is it in St. Louis, Missouri?" The players are allowed to check the map and the first player to set his clock on the correct time wins a point for his team. If both players give incorrect times, they are asked to return to their seats and the next players from each team attempt to answer correctly. The game continues untill all players have had a chance. The team with the most points wins.

Variations:
1. The players could write their answers on the chalkboards, eliminating the use of clocks.
2. The game can be played with cities in the 24 time zones throughout the world.
3. Answers can be written on paper, each team receiving one point for each correct paper submitted by a player.
4. Each player can be given a small clock with all players simultaneously responding. Each correct answer earns a point for the team.

Cautions:
1. If time zones throughout the world are used, players must indicate whether the time is A.M. or P.M. and also which day it is.
2. Daylight saving time will need to be considered.

13. Use such questions as the following for the map which follows this lesson:
    A. In what time zone is the state of Wisconsin located? (Central)
    B. The United States is in how many time zones? (5--Alaska and Hawaii)
    C. Which time zone includes the most states? (Eastern) Which, the least? (one with Hawaii and Alaska)
    D. How many states are in more than one time zone? (9)
    E. If it is 12 noon in Evansville, Indiana, what time is it in Indianapolis, Indiana? (1 P.M.)
    F. If it is 2 P.M. in Santa Rosa, California, what time is it in Altoona, Pennsylvania?
    G. How many states are in the Atlantic Time Zone?
    H. If it is 12 midnight in Montreal, Canada, what time is it on Prince Edward Island, Canada?
    I. Is Escanaba, Michigan, in the Eastern or Central Time Zone or perhaps both?
    J. If it takes a half-hour to fly from Grand Rapids, Michigan, to Milwaukee, Wisconsin, and one leaves Grand Rapids at midnight, what time would one arrive in Milwaukee?

Reference Materials:

Criterion-Reference Test: Where and Why Test for Cassette 21

Holt Correlations:

WHERE AND WHY

TEST FOR CASSETTE 21

Time

Name ____________________

Date ____________________

Required materials: Raised Relief World Map (28" x 18"); 12" Sculptural Relief Globe

Write your answers in the large blanks.

1. If the earth rotates 360 degrees in 24 hours, how many degrees does it rotate each hour?

15°

2. How long does it take the earth to rotate 45 degrees?

three hours

3. A new day begins after

(a) twelve noon
(b) twelve midnight
(c) sunrise

(b) twelve midnight

Use the world map to answer the questions below.

4. Find the city of Manaus, in South America. Manaus is just south of the equator, at 60° west longitude. If it is 8:00 A.M. along the prime meridian, what time is it in Manaus?

(a) 4:00 P.M.
(b) 4:00 A.M.
(c) 3:00 A.M.

(b) 4:00 A.M.

5. Find the city of Alexandria, in Africa. Alexandria is at 31° north latitude and 30° east longitude. If it is 11:00 A.M. in Manaus, what time is it in Alexandria?

5:00 P.M.

Use the time dial on the globe to answer the next question.

6. Find the city of New Orleans, in the United States. New Orleans is at 30° north latitude and 90° west longitude. If it is 1:00 P.M. along the prime meridian, what time is it in New Orleans?

7:00 A.M.

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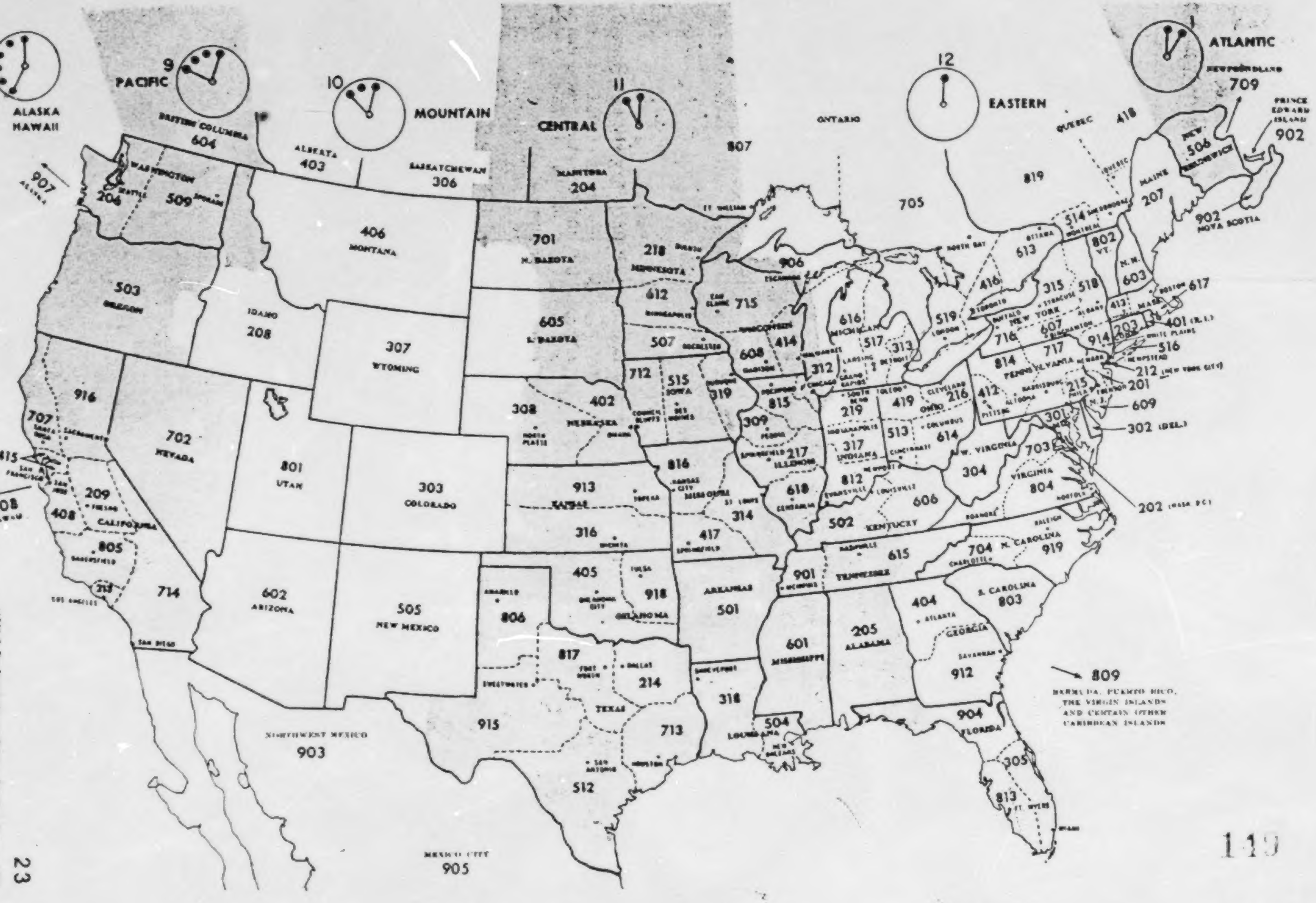
Area Codes and Time Zones


7 ALASKA HAWAII
9 PACIFIC
10 MOUNTAIN
11 CENTRAL
12 EASTERN
1 ATLANTIC
907 ALASKA
BRITISH COLUMBIA 604
ALBERTA 403
SASKATCHEWAN 306
MANITOBA 204
807
ONTARIO
705
819
QUEBEC 418
514 MONTREAL
613 OTTAWA
416 TORONTO
519 LONDON
NEWFOUNDLAND 709
NEW BRUNSWICK 506
PRINCE EDWARD ISLAND 902
902 NOVA SCOTIA
WASHINGTON 206 SEATTLE 509 SPOKANE
503 OREGON
208 IDAHO
406 MONTANA
307 WYOMING
701 N. DAKOTA
605 S. DAKOTA
218 MINNESOTA
612 MINNEAPOLIS
507 ROCHESTER
715
414
608 MADISON
906
916 SACRAMENTO
707
415 SAN FRANCISCO
408 SAN JOSE
209 FRESNO
CALIFORNIA
805 BAKERSFIELD
213 LOS ANGELES
714 SAN DIEGO
808 HAWAII
702 NEVADA
801 UTAH
303 COLORADO
308 NORTH PLATTE
402 NEBRASKA OMAHA
712 COUNCIL BLUFFS
515 IOWA DES MOINES
319 DUBUQUE
913 KANSAS TOPEKA
316 WICHITA
816 KANSAS CITY
314 ST LOUIS MISSOURI
417 SPRINGFIELD
602 ARIZONA
505 NEW MEXICO
806 AMARILLO
405 OKLAHOMA CITY
918 TULSA OKLAHOMA
501 ARKANSAS
817 FORT WORTH
214 DALLAS
915
TEXAS
713 HOUSTON
512 SAN ANTONIO
318 SHREVEPORT
504 LOUISIANA NEW ORLEANS
601 MISSISSIPPI
901 MEMPHIS
615 NASHVILLE TENNESSEE
205 ALABAMA
404 ATLANTA GEORGIA
912 SAVANNAH
904 FLORIDA
305
813 FT. MYERS
MIAMI
803 S. CAROLINA
704 CHARLOTTE N. CAROLINA
919 RALEIGH
312 CHICAGO
815 ROCKFORD
309 PEORIA
217 SPRINGFIELD ILLINOIS
618 CENTRALIA
616 MICHIGAN GRAND RAPIDS
517 LANSING
313 DETROIT
219 SOUTH BEND
317 INDIANAPOLIS INDIANA
812 EVANSVILLE
419 TOLEDO
216 CLEVELAND OHIO
513 CINCINNATI
614 COLUMBUS
502 KENTUCKY LOUISVILLE
606
304 W. VIRGINIA
703
804 VIRGINIA NORFOLK
202 (WASH. D.C.)
301
302 (DEL.)
412 PITTSBURGH
814 ALTOONA
717 PENNSYLVANIA HARRISBURG
215 PHILA
609 TRENTON
201 NEWARK
212 (NEW YORK CITY)
516 HEMPSTEAD
914 WHITE PLAINS
716 BUFFALO
315 SYRACUSE NEW YORK
607 BINGHAMTON
518 ALBANY
203 CONN.
413
617 BOSTON MASS.
401 (R.I.)
802 VT.
603 N.H.
207 MAINE
809
BERMUDA, PUERTO RICO, THE VIRGIN ISLANDS AND CERTAIN OTHER CARIBBEAN ISLANDS
NORTHWEST MEXICO 903
MEXICO CITY 905

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SIXTH GRADE LESSON FOUR: CLIMATE

Required Materials:
1. Tape #22
2. 12 inch sculptural relief globe
3. Nyco Marker

Behavioral Objectives:
1. Students will differentiate between the terms climate and weather.
2. Students demonstrate their understanding of the following generalization: An increase in latitude is related to a a decrease in yearly average temperature. Given selected cities, and a physical political globe as reference, pupils will correctly indicate whether a city is located in the high, middle or low latitudes.
3. Students demonstrate their understanding of the following generalization: An increase in elevation is related to a decrease in yearly average temperature. Given pairs of cities with approximately the same latitude but an appreciable difference in elevation, and a physical-political globe as a reference, students will correctly predict which city in each pair has a "cooler" or "warmer" climate.

Wisconsin Design Study Skill Correlation:
1. G-3

Extension Activities:
1. Learning to Use the Globe 2, pages 8-9.
2. Learning to Use a Map, pages 31-34.
3. Children can keep a record of the local rainfall and temperatures, recording this information on a bar or line graph. They can then study other areas of the world that have similar temperature readings and amounts of rainfall, noting whether elevation and latitude location are also similar.
4. During the course of the school year, children maintain a record of daily weather conditions. Periodically, the weather information can be summarized into climatic descriptions.
5. Locate the Arctic and Antarctic Circles, Tropic of Cancer, Tropic of Capricorn, and the Equator on a world map or globe. Have students read and report about the environment, plant and animal life at each latitude.
6. Indicate how the above latitude lines create zones known as the Torrid and Temperate Zones. What Zone is Beloit, Wisconsin, included in? What factors might make the climate in the Southern Temperate Zone different from the climate in the Northern Temperate Zone?

7. On a U.S. or world climatic map, determine the type of climate which prevails in Wisconsin. How might this have influenced Wisconsin's history?
8. Make a list of cities which are found at approximately the same latitude. Next to each city, indicate its general climate and elevation. What conclusions can you draw from your data?
9. Find out what specific latitude numbers are usually used to separate the high from the middle from the low latitudes.
10. Choose two cities at the same latitude but with different climates. Explain how such factors as the following might influence the difference: altitude, ocean currents, nearness to a large body of water, nearness to mountain ranges, etc.
11. Describe to students the climate and temperature of specific areas and ask them how they would live and where the area might be located. Compare their description with the areas using stories and pictures. Discuss how temperatures and climate may affect people's behavior (e.g., siestas in hot weather). Discuss changes people go through when they move from one climate to another or from one elevation to another. Students could role play this situation.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 22

Holt Correlations:
5-4-10; 5-2-2; 5-2-8; 5-5-1;
6-7-1

WHERE AND WHY

TEST FOR CASSETTE 22

Climate

Name ____________________

Date ____________________

Required materials: 12" Sculptural Relief Globe

Use the globe to answer the questions below. Write your answers in the large blanks.

1. Which phrase below could be used to describe a city's *climate?*

   (a) windy and cooler
   (b) 98° and rainy
   (c) cool all year

   c

2. Find the city of Salvador. Salvador is south of the equator, on the east coast of South America. Is Salvador located in the high, middle, or low latitudes?

   low latitudes

3. Which of the following phrases best describes Salvador's climate?

   (a) warm in summer, cool in winter
   (b) warm all year round
   (c) cool all year round

   b

4. Find the city of Igarka in the Union of Soviet Socialist Republics. Igarka is near 67° north latitude and 86° east longitude. Which of the following phrases best describes Igarka's climate?

   (a) warm in summer, cool in winter
   (b) warm all year round
   (c) cool all year round

   c

5. Find Kansas City in the United States. Kansas City is near 39° north latitude and 95° west longitude. Which of the following phrases best describes Kansas City's climate?

   (a) warm in summer, cool in winter
   (b) warm all year round
   (c) cool all year round

   a

6. Find the city of Cusco, which is directly west of Salvador. Cusco is a short distance from the west coast of South America. Which of the following statements best describes Cusco's climate?

   (a) Cusco has the same climate as Salvador.
   (b) Cusco has a warmer climate than Salvador.
   (c) Cusco has a cooler climate than Salvador.

   c

SIXTH GRADE LESSON FIVE: USING SPECIAL MAPS

Required Materials:
1. Tape #23
2. Sculptural Relief Wall Map of the United States with Overlay

Behavioral Objectives:
1. Given a rainfall map of the United States, students will determine the annual rainfall in selected regions.
2. Given a map of frost-free areas of the united States, pupils will determine the yearly number of frost-free days in selected regions.
3. Given a shaded-relief map of the 48 contiguous states, students interpret the map's relief to conclude that the western half of the United States is more mountainous than the eastern half.
4. Given a shaded-relief map of the 48 contiguous states with supplementary thematic maps, students explain why the eastern half of the United States is more agriculturally productive than the western half. Their explanations will be based on rainfall, growing season, and ruggedness of terrain.

Wisconsin Design Study Skills Correlations:
1. G-1

Extension Activities:
1. Learning To Use A Map, pages 18-22
2. Collect various types of maps, such as rainfall maps, product maps, physical maps, political maps, frost-free days maps, growing seasons maps, city maps, road maps, etc. Label each one and arrange them on a bulletin board.
3. Ask questions about Wisconsin history and/or current events. Have students look at and/or draw maps to answer the questions. Examples: How much of Wisconsin was forested in the 1600s? In what areas of the country was there considerable flooding over the summer?
4. Translate geographic data (e.g., rainfall) into simple bar graphs.
5. Use maps to help explain why current or historical events might have occurred.
6. Landscape pictures may be cut out of magazines and presented to the pupils for speculation as to their geographic location. After the students have completed their guessing and reasoning, the identity of the location can be revealed on a special map which would provide the key piece of revealing information.
7. The teacher can secure an outdated political map of the world and have the class compare it with a current political map.

8. Introduce the concept of a political map. Why is it helpful and to whom? Have students make a simple political map of neighborhood or town voting patterns, for example, or on income levels in the town, location of big business and small business, or distinct ethnic and/or racial groups in the town. Discuss to what people or groups such maps might be helpful, what the maps suggest about the nature of the town, what people can learn from them. Small groups of students could work together on this gathering information. Some groups could make political maps and others could make special purpose maps. Its subject matter could be determined by questions students formulate about the town.
9. Children can keep a record of the local rainfall and temperature, recording this information on a bar or line graph. The cumulative results can be compared to other contrasting areas that differ in temperature and rainfall, using maps and globes in developing major generalizations.
10. Borrow aerial maps from the county conservation office. What observations and predictions can the class make after studying these maps?
11. Construct window-shade maps to emphasize special pieces of information that can be revealed on a map (See Corcoran, 1976).
12. As another unique means of creating specialty maps, a corkboard map can be constructed (See Pajak, 1975). For both 11 and 12, students will need to develop their own symbols for the maps.
13. Each student can construct his/her own creative map. In addition, a story can be written to accompany the map. While the child reads the story, the class could use the map as an interpretive guide to the story content. Each child could also prepare a list of questions about his/her own map to ask the other children to test their knowledge of the creative map.
14. Students can create floor plan maps of the building to be eventually placed at each entrance to help guide visitors.
15. Assign population map exercises following this lesson.

Reference Materials:

Criterion-Referenced Test: Where and Why Test for Cassette 23

Holt Correlations:
3: 3-4; 3-10;
4: 3-3; 4-2; 2-3; 7-12; 8-2
5: 1-11; 2-1; 2-13; 9-1; 4-8; 4-5; 6-4; 10-1; 1-10
6: 4-2; 5-1; 6-1; 7-8, 9, and 10

WHERE AND WHY

TEST FOR CASSETTE 23

Using Special Maps

Name ____________________

Date ____________________

Required materials: Sculptural Relief Wall Map of U.S. with name overlay in place

Use the relief map and four special maps to answer the questions below. Write your answers in the large blanks.

1. Find the southeastern United States. The southeastern United States receives___to___inches of rainfall per year.

   40 to *80*

2. Find the state of Maine in the northeastern United States. Maine has___to___frost free days per year.

   100 to *160*

3. Which half of the United States is more mountainous: the *eastern* half or the *western* half?

   western

4. Which half of the United States has a greater area receiving more than 20 inches of rain: the *eastern* half or the *western* half?

   eastern

5. Which half of the United States has a greater area with more than 160 frost free days: the *eastern* half or the *western* half?

   .eastern

6. More food is grown in the eastern half of the United States than in the western half, because

   (a) the eastern half has more rainfall
   (b) the eastern half has more frost free days
   (c) the eastern half is less rugged
   (d) all of the above

   d

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Compare Maps 1 and 2 to Answer the Following Questions:

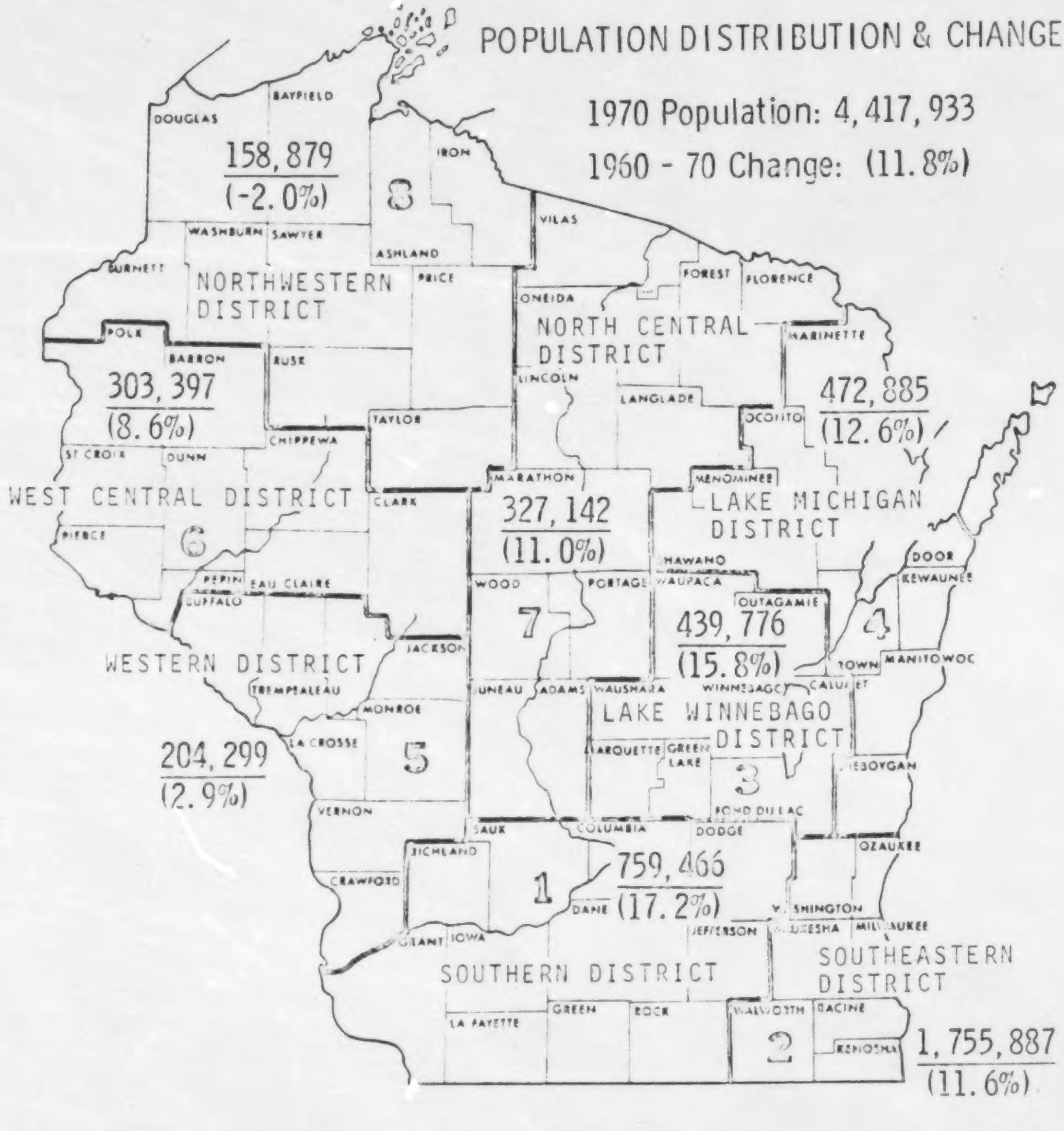
1. What is the source of information for these maps?
2. For each of the compass rose directions, indicate if the 1970-90 population change will be greater or less than the 1960-70 population change.
3. In what sections of the state (e.g, northwest, southern, etc.) will growth be the slowest? the fastest?
4. Compare the growth in the Rock County population over the thirty years covered with the rest of the state of Wisconsin.
5. Based on previous map learnings, what factors could be involved in the various growth patterns?
6. Which map is more accurate? Why?

WISCONSIN

POPULATION DISTRIBUTION & CHANGE

1970 Population: 4,417,933

1960 - 70 Change: (11.8%)


NORTHWESTERN DISTRICT
8
158,879 (-2.0%)
303,397 (8.6%)
WEST CENTRAL DISTRICT
6
WESTERN DISTRICT
5
204,299 (2.9%)
NORTH CENTRAL DISTRICT
327,142 (11.0%)
7
LAKE MICHIGAN DISTRICT
472,885 (12.6%)
4
LAKE WINNEBAGO DISTRICT
439,776 (15.8%)
3
759,466 (17.2%)
1
SOUTHERN DISTRICT
SOUTHEASTERN DISTRICT
2
1,755,887 (11.6%)
DOUGLAS
BAYFIELD
IRON
ASHLAND
WASHBURN
SAWYER
BURNETT
PRICE
VILAS
ONEIDA
FOREST
FLORENCE
MARINETTE
POLK
BARRON
RUSK
LINCOLN
LANGLADE
OCONTO
TAYLOR
CHIPPEWA
ST CROIX
DUNN
MARATHON
MENOMINEE
CLARK
PIERCE
SHAWANO
PEPIN
EAU CLAIRE
BUFFALO
WOOD
PORTAGE
WAUPACA
OUTAGAMIE
DOOR
KEWAUNEE
JACKSON
TOWN
MANITOWOC
TREMPEALEAU
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
MONROE
LA CROSSE
MARQUETTE
GREEN LAKE
SHEBOYGAN
VERNON
FOND DU LAC
SAUK
COLUMBIA
DODGE
OZAUKEE
RICHLAND
CRAWFORD
DANE
WASHINGTON
GRANT
IOWA
JEFFERSON
WAUKESHA
MILWAUKEE
LA FAYETTE
GREEN
ROCK
WALWORTH
RACINE
KENOSHA

MAP 1

SOURCE: Wisconsin Bureau of Planning and Budget,
Wisconsin Profile Series-Population, April 1971.

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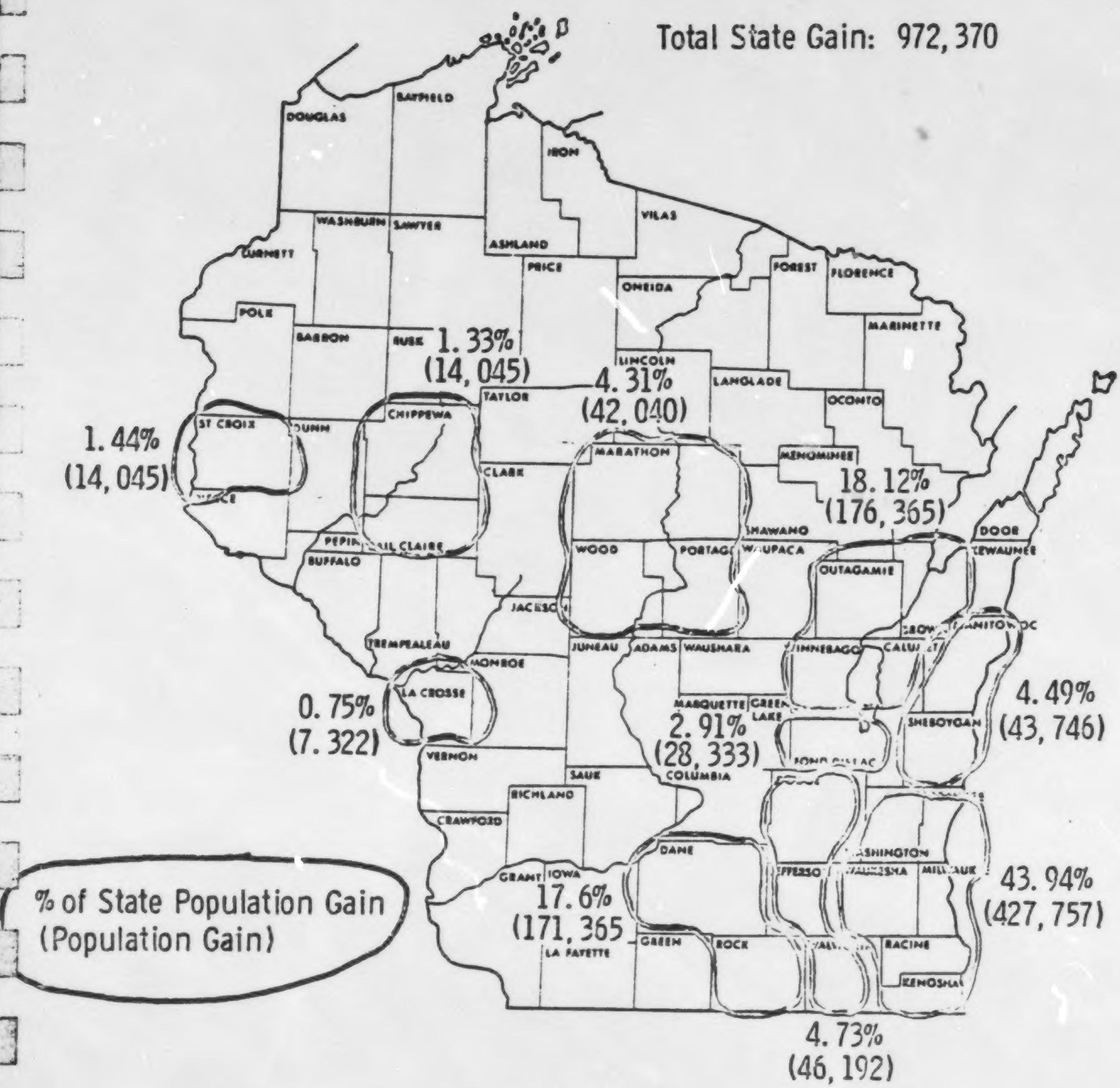
WISCONSIN
1970 - 1990 POPULATION GAINS
IN URBANIZED AREAS

Total State Gain: 972,370


DOUGLAS
BAYFIELD
IRON
VILAS
WASHBURN
SAWYER
ASHLAND
BURNETT
PRICE
FOREST
FLORENCE
ONEIDA
POLK
BARRON
RUSK
1.33%
(14,045)
MARINETTE
LINCOLN
4.31%
(42,040)
LANGLADE
OCONTO
TAYLOR
ST CROIX
DUNN
CHIPPEWA
1.44%
(14,045)
MARATHON
MENOMINEE
18.12%
(176,365)
CLARK
SHAWANO
DOOR
PEPIN
EAU CLAIRE
WOOD
PORTAGE
WAUPACA
OUTAGAMIE
KEWAUNEE
BUFFALO
JACKSON
TREMPEALEAU
JUNEAU
ADAMS
WAUSHARA
WINNEBAGO
CALUMET
MANITOWOC
MONROE
LA CROSSE
0.75%
(7.322)
MARQUETTE
GREEN LAKE
2.91%
(28,333)
4.49%
(43,746)
SHEBOYGAN
VERNON
FOND DU LAC
SAUK
COLUMBIA
RICHLAND
CRAWFORD
DANE
WASHINGTON
% of State Population Gain
(Population Gain)
GRANT
IOWA
17.6%
(171,365)
JEFFERSON
WAUKESHA
MILWAUKEE
43.94%
(427,757)
LA FAYETTE
GREEN
ROCK
WALWORTH
RACINE
KENOSHA
4.73%
(46,192)

MAP 2

SOURCE: Wisc. Bureau of Planning and Budget,
1970 - 1990 Population Projections.

GLOSSARY

1. Angle--is formed when two lines or surfaces meet (or have a common end point).
2. Antarctica--a body of land around the South Pole
3. atmosphere--the mass of air surrounding the earth
4. axis--the inclination on which the earth rests
5. boundary--something that indicates or fixes a limit or extent; a separating line
6. capital--seat of government of an area such as a state or country
7. cardinal directions--the four major directions--north, east, south, west
8. cartographer--a person who makes maps
9. circle--a closed plane curve every point of which is equidistant from a fixed point within a curve
10. climate--the average course or condition of the weather at a place over a period of years
11. coastline--the outline or shape of land along the seashore
12. compass--an instrument for showing directions
13. compass rose--a direction indicator on a map or globe
14. compute--to determine desired data
15. continent--one of the seven great masses of land
16. contour line--a line connecting the points on a land surface that have the same elevation
17. contour map--a map that has lines connecting the points on a land surface that have the same elevation
18. degree--a unit for measuring angles; 1/360th of a circle
19. desert--a dry area that cannot support any considerable population without an artificial water supply
20. diagram--a representation of explanation of facts
21. direction--any way in which one may face or point
22. distance--the amount of separation between two points
23. distorted--out of proportion
24. distortion--the state of being out of shape
25. east--the direction of the sunrise; direction to one's right when he is facing north
26. equator--zero degrees latitude; the great circle around the middle of the earth
27. globe--a spherical replica of the earth
28. grid--the network of lines on a map or globe
29. hemisphere--half of a sphere or rounded object
30. high latitude--latitude between 60 degrees and 90 degrees north latitude and between 60 degrees and 90 degrees south latitude
31. humidity--the degree of wetness in the air
32. interstate highway--cross country thorough-fare; usually multilane-divided

33. International Date Line--180 degree longitude; an imaginary line agreed upon as the place where each calendar day begins
34. irregular coastline--a coastline with many indentations
35. island--land that is completely surrounded by water
36. jungle--an area overgrown with thickets and masses of vegetation
37. low latitude--latitude that is between 30 degrees north and 30 degrees south latitudes
38. magnet--something that attracts something else
39. map--a representation on a flat surface of the whole or part of an area
40. map gore--a map section which is triangular in shape
41. map legend--a key to use in reading and understanding a map
42. map scale--the divided line on a map that indicates the length which represents a larger unit of measure
43. meridians of longitude--lines running north-south, from pole to pole; measure distance from east to west
44. middle latitude--latitude between 30 degrees and 60 degrees north latitude and between 30 degrees and 60 degrees south latitude
45. minute--a sixtieth part of a degree
46. model--a smaller representation of something
47. moisture--dampness
48. north--the direction of the north pole
49. northeast--the point midway between the cardinal points of north and east
50. northwest--the point midway between the cardinal points of north and west
51. North Pole--the northernmost point of the globe
52. ocean--one of the large bodies of water composing the whole body of salt water that covers nearly 3/4 of the earth's surface
53. orient--to get one's bearings; that is, to determine directions
54. parallel--the state of running in the same direction, having all points on the lines equidistant and never meeting
55. parallels of latitude--lines that run east-west and measure distance north and south of the equator
56. planet--one of the bodies--other than the comets, meteors, or satellites made by man--that revolves around the sun in the solar system

57. Polaris--the North Star; the brightest star in the Little Dipper (at the end of the handle)
58. polar map--a map of the regions of the North and South Poles
59. polar projection--a presentation of the grid of the region around either pole
60. political map--a map that shows the divisions of towns, counties, states, and countries
61. precipitation map--a map that shows the average amount of water fall (rain, snow, sleet, hail) of an area over a given period of time
62. Prime Meridian--zero degrees longitude; the meridian from which the longitudes east and west are measured
63. protractor-the instrument used for drawing and measuring angles
64. regular coastline--a coastline that is fairly even, with few indentations
65. relief map--a map that shows what the land of a region looks like--plains, hills or mountains; indicates how high above the sea that land is
66. reservoir--an artificial lake where water is collected and kept
67. right angle--a 90 degree angle; the angle that is formed by two straight lines that are perpendicular to each other
68. road map--a map showing towns and cities, state and federal highways, distance between towns, state capitals, waterways and similar information
69. scale--as used in "to map to scale" means to let inches stand for feet, yards, or even miles
70. sea level--the level of the surface of the sea
71. solar system--the sun with a group of heavenly bodies that are held by its attraction and revolve around it
72. south--the direction opposite north
73. scutheast--the point midway between the cardinal directions of south and east
74. South Pole--the southernmost part of the globe
75. southwest--the point midway between the cardinal points of south and west
76. spherical--globular
77. symbol--something that stands for something else
78. temperature--the degree of heat or cold
79. terrain--the physical features of the land
80. thematic map--a map that is related to a specific theme; a special map

81. topographical map--a map of a surface including its relief and the position of its natural and man-made features
82. topography--the art of practice of making maps of a surface showing its relief and the position of its natural and man-made features
83. weather--the state of the atmosphere with respect to heat or cold; wetness or dryness; calm or storm; clearness or cloudiness
84. west--the direction of the sunset; direction to one's left when facing north

ARTICLE FILE

BRAME, Charles L., "Map-Match, a Game That Really Swings"

CACKOWSKI, Frank J., "Reading a Road Map: A Successful Transition Unit"

CORCORAN, Daniel J., "Window-Shade Maps"

FROISETH, Kathryn W., "Map Activities for Primaries"

GEER, Manie T., "Map-Making Begins with Inquiry"

GODFREY, L. L., "Map Reading—The Learning Stations Way"

HAWKINS, Mim S., "On the Map"

KLEIN, Judith S., "Up ≠ North"

KNUTSON, Marjorie, "Learn and Play on the U.S.A."

LADD, Richard S., "Treasure Maps and Charts"

MARINE, Helen, "Using Audiovisuals in Map Reading Readiness Instruction"

McCRYSTAL, James G., et al, "Geography in Industrial Arts"

MOFFET, J. Bryan, "A Mapping Gazetteer"

O'CONNOR, James and SHUGRUE, Sylvia K., "Reading Contour Maps"

OWEN, M. F., "Tips for Using the Poster on Maps"

PAJAK, Edward J., "A Corkboard Map or Timeline: A New Dimension for the Classroom Bulletin Board"

PICOZZI, Michael, "Primary Geography"

PIERCE, Elfrieda, "Ye Olde Treasure Map"

QUACKENBUSH, Ernest L., "Maps and Scooters"

SAS, Anthony and JONES, Janice E., "Mapping the Action!"

VUCICH, George, "A Road Map to Geography"

ZEVIN, Jack, "Mystery Island"

Introduction

Map study and map-making activities receive the greatest emphasis in this program, yet elements of physical geography are abundant. The multi-media materials have been designed to complement and to supplement existing social studies curricula in grades 1-3. Usage is by no means limited to these grades, however. It simply depends on the amount of material any particular class can absorb at a certain stage of development. Only the teacher can be a judge of that.

There are ten lessons and classroom time required to complete one lesson can be anywhere from three to five days. If one chooses to teach the material from beginning to end without interruption, the amount of class time required will be six weeks more or less.

Major objectives are to show children how natural and man-made features that appear on the surface of earth can be represented on maps. The activities and materials will help children understand how reality portrayed in a photograph or observed on the landscape is portrayed on a map with lines, shapes, and colors, simple drawings, and symbols.

The difficulty in acquiring a geographical point of view will be alleviated by the frequent use of aerial photographs. These appear in the filmstrips and on the study prints. Children will be given numerous opportunities to observe, appreciate, and understand the nature of maps—maps are not only abstract pictures of the earth, our world, but pictures of the earth as it appears from a particular vantage point above it.

Three filmstrips introduce the major concepts. They are *Maps Are Pictures, Maps Use Symbols, Maps Show Where* with sound track on records or cassettes. These concepts are given subsequent development, reinforcement, and review in the Pupil Workbook and other components. Each box contains 30 workbooks.

The kit includes a set of flash cards that can be used to learn common map symbols and their corresponding vocabulary words.

Of special interest are the sheets of die-cut, pressure-sensitive labels to be used in conjunction with the first six study prints. The label sheets contain map symbols. Pupils are to select the correct symbol, remove it from the sheet, then place it over the natural or man-made feature shown on the study print.

The large floor map is another unusual feature of this program. The map is large enough to allow four or five children to work on it simultaneously. Pupils can recreate their own neighborhood or community, or perhaps build a new one using this map. They can learn many things about the everyday activities that take place in most communities.

The floor map as well as other components will encourage children to discover where things are, and what particular purposes they serve in supplying needs and wants of man.

At the conclusion of this program, children should be able to answer questions about their environment, its geographic features, and how these features are represented on maps.

Pupils should also be able to draw some conclusions about why certain things are located where they are. They will also begin to understand the ways in which physical geography influences the quality of human life. How does man living in a different climate, for example, go about fulfilling his needs for food, clothing, and shelter? Why are some places on earth more heavily populated than others? These are meaningful questions.

APPENDIX A

Appendices

APPENDIX B

INTRODUCTION

In this modern age of instant travel and instant communication, our attention is being focused more and more on people, places, and happenings around the world. Events that occur in London, Moscow, and Peking are often of more immediate interest than events that occur in our own communities. It is difficult to fully understand the significance of these important world events unless one can place them in their proper geographical perspective. The ability to interpret maps and globes has thus become an indispensable tool in helping us to understand the political and social events of our times.

Maps and globes are present in our daily lives in a variety of forms. It is difficult to imagine, for example, getting through a single day without being exposed at least once to some type of map material. City and state maps are dispensed freely at service stations everywhere. Newspaper articles are often accompanied by maps designed to acquaint the reader with the location of specific events. On television, news commentators frequently use maps while guiding their viewers through a summary of the day's happenings, and weathermen use maps to present the latest weather reports. Encyclopedias and other reference sources in our homes, schools, and libraries are filled with hundreds of different kinds of maps. Even the toy departments in our local stores offer a wide array of attractive globes, maps, and map puzzles that serve as a source of learning and entertainment for our children.

Despite the abundance and availability of these valuable resource materials, it is disturbing to note that so many of our young people complete their formal education without having mastered the skills required for their use. Yet practically everyone who has attended school for even a minimum number of years has been exposed to some type of instruction in map and globe skills. Why is it that our children grow up knowing so little about the use of map materials or their value as research tools?

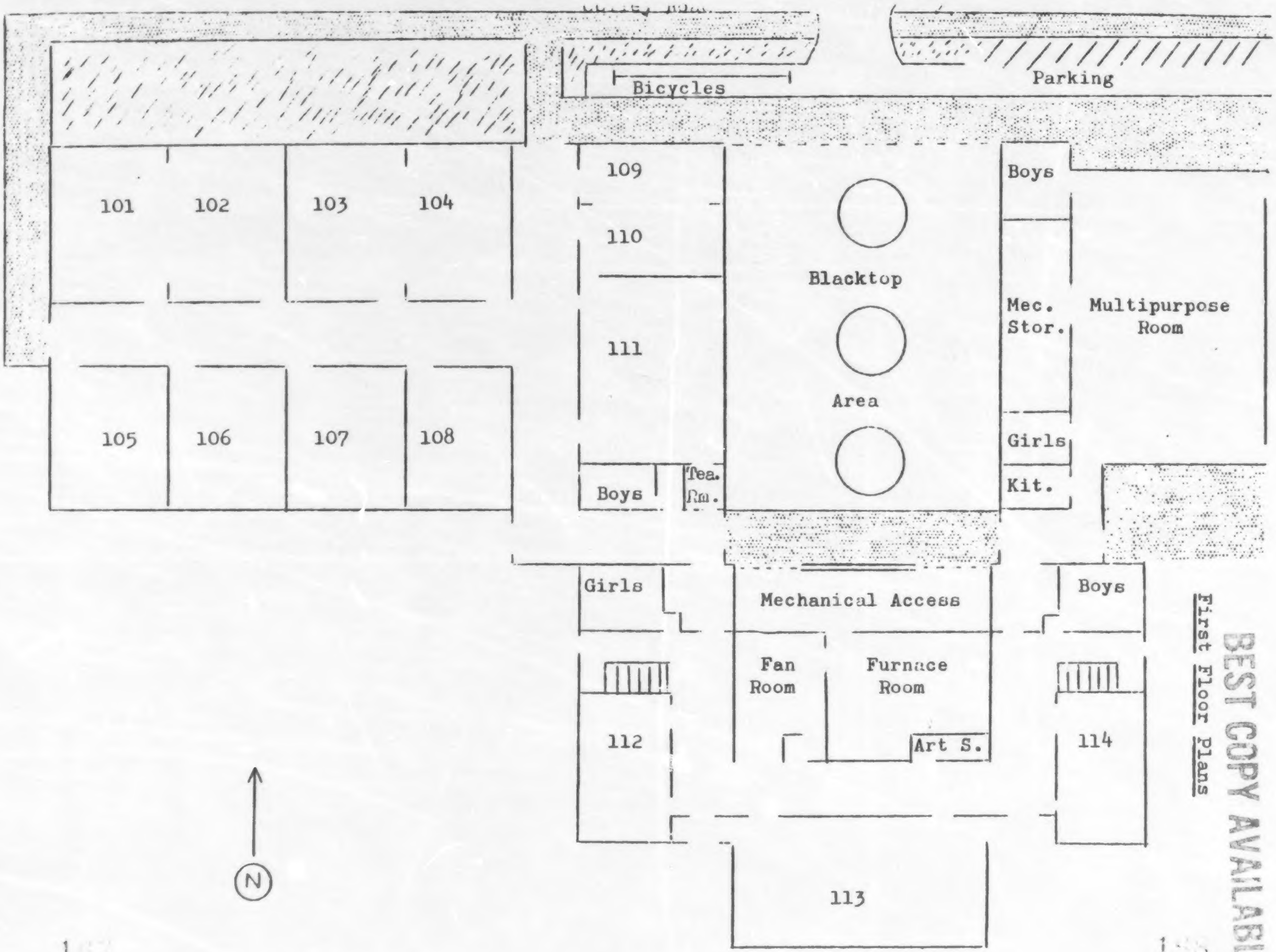
Perhaps the answer to this question lies in problems related to the teaching of map and globe skills. Few elementary teachers are geography experts, nor should they be expected to be. As generalists, they have had to rely on a textbook approach almost to the exclusion of other methods of instruction. Students have been provided with factual data, but not with the means with which to apply it. Reading or hearing about maps and globes is clearly not enough. Merely sitting, passively absorbing bits and pieces of factual information, can scarcely be defined as learning. Unfortunately, however, this is precisely the way in which map and globe skills have traditionally been taught. Small wonder, then, that students and teachers have found little reward in this potentially interesting area of learning. In order to make map and globe skills learning meaningful to our students, we must find ways of actively involving our students in the learning process. To date, however, there has been an almost total lack of material specifically designed to make this involvement possible.

Where and Why, a map and globe skills cassette program, was developed in direct response to the challenges outlined above. As a professional geographer long interested in and concerned about problems related to geographic education, it has been my special privilege to have participated in the development of this unique program. In my role as consultant, I have reviewed the instructional objectives, cassette lessons, and evaluation materials contained in the *Where and Why* program. I am convinced that this innovative program will enable students to acquire a high level of map and globe skills learning.

This structured, developmental program was specially designed to provide students with a sequential presentation of skills and concepts related to map and globe materials. The program was constructed for maximum flexibility of use, so that it can be used equally well for large group, small group, or individualized instruction. Because of the self-instructional nature of the cassette format, students may progress through the program at their own individual learning rates. The cassettes involve the student with a variety of map and globe materials, and encourage him to actively participate in each learning session.

In my opinion, the *Where and Why* program represents a new and exciting approach to map and globe skills learning. Upon successful completion of this comprehensive unit of study, the student will be better equipped to effectively use these valuable research tools in acquiring information about his community, his country, and his world.

Phillip Bacon


Bicycles
Parking
101
102
103
104
105
106
107
108
109
110
111
Boys
Tea. Rm.
Blacktop
Area
Boys
Mec. Stor.
Multipurpose Room
Girls
Kit.
Girls
Mechanical Access
Boys
Fan Room
Furnace Room
Art S.
112
113
114
N

First Floor Plans

A-1

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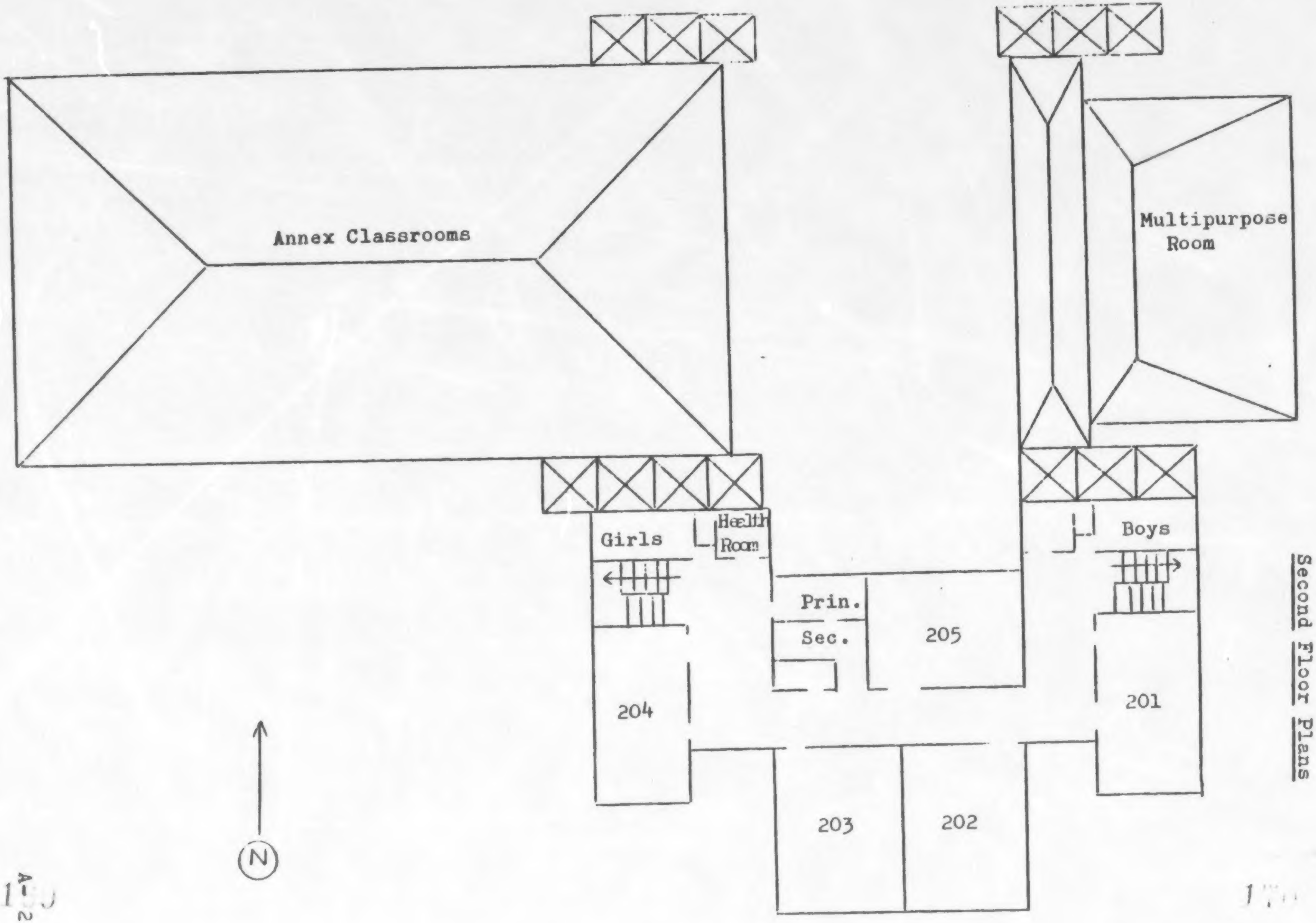
Annex Classrooms
Multipurpose Room
Girls
Health Room
Boys
Prin.
Sec.
205
204
201
203
202
N

Second Floor Plans

Todd School District

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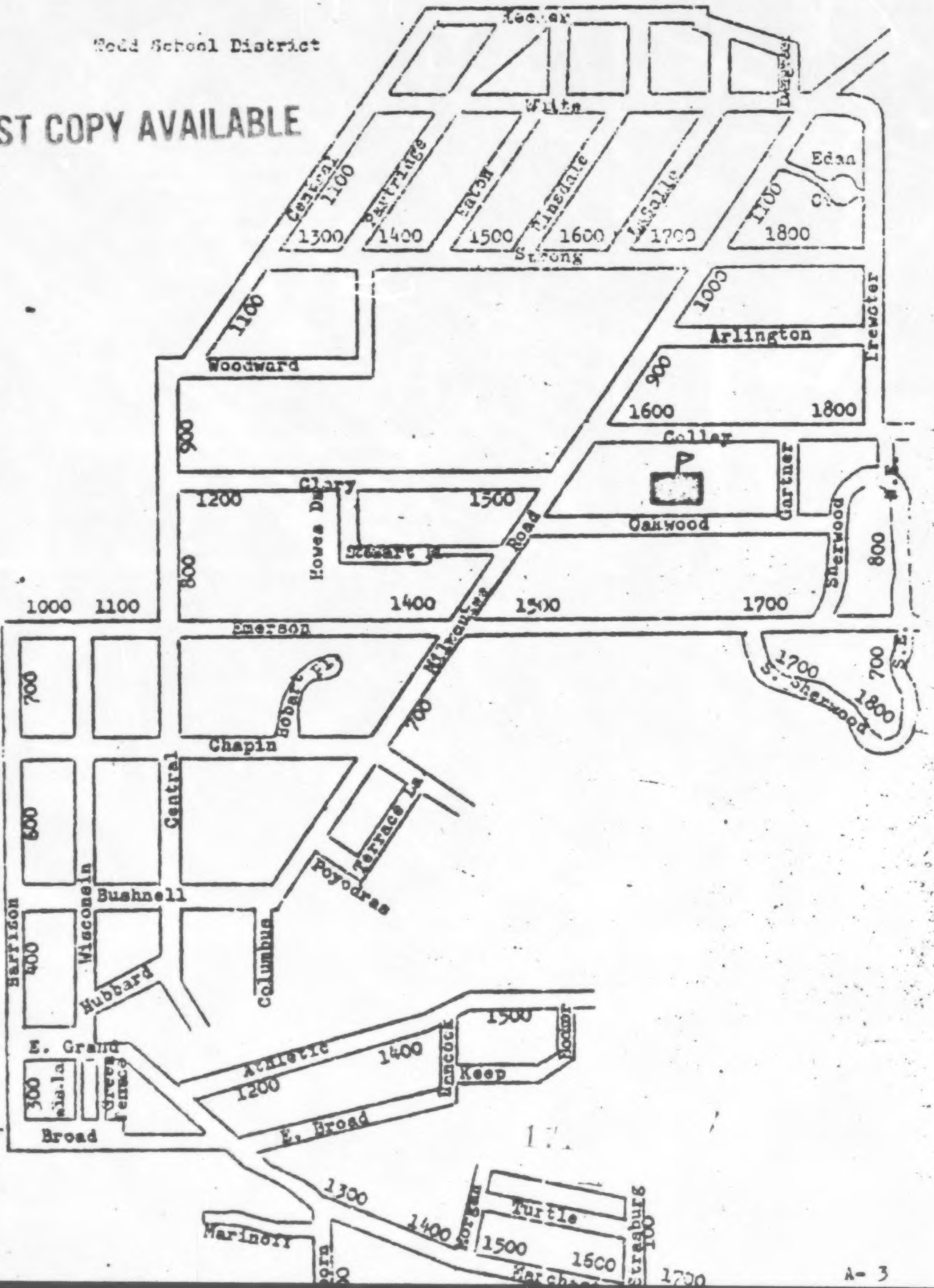
Keeker
White
Central
1100
Partridge
Eaton
Pinedale
LaSalle
1100
Edan
Ct
1300
1400
1500
1600
1700
1800
Strong
1100
1000
Arlington
Brewster
Woodward
900
900
1600
1800
Collar
Gartner
Clary
1200
1500
Howes Dr
Oakwood
Road
800
Sherwood
800
1000
1100
1400
Milwaukee
1500
1700
Emerson
1700
S. Sherwood
1800
700
700
Hobart Pl
700
Chapin
800
Central
Terrace La
Poyodras
Bushnell
Harrison
400
Wisconsin
Columbus
Hubbard
1500
1400
Athletic
1200
Hancock
Keep
E. Grand
300
Broad
E. Broad
1300
1400
Turtle
Morgan
Strasburg
100
1500
1600
Marinoff
1700

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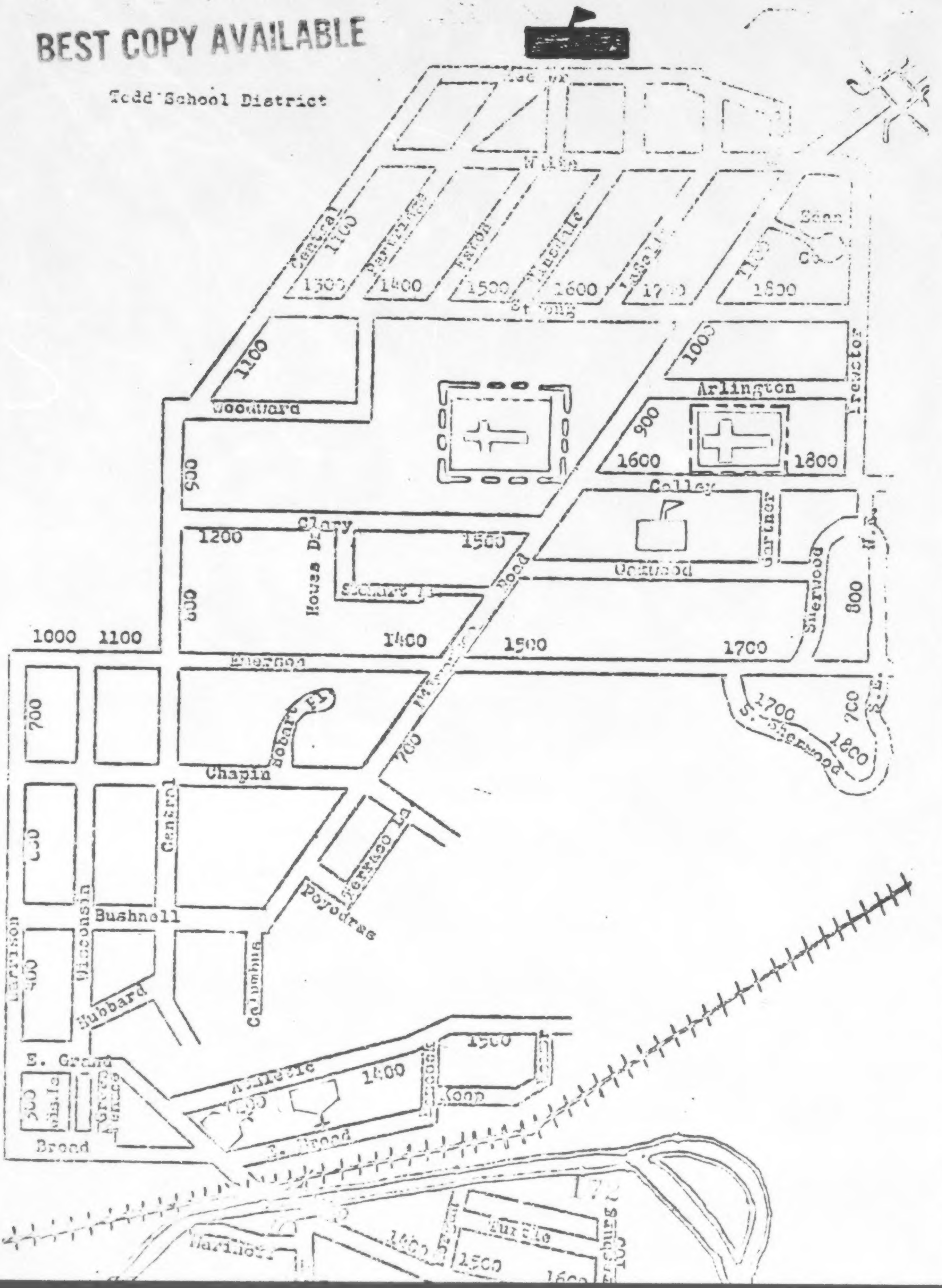
Todd School District


White
Central
1100
1300
1400
1500
1600
1700
1800
Strong
1100
1000
Woodward
Arlington
900
1600
1800
Colley
900
Clary
1200
1500
Oakwood
Gardner
Sherwood
800
Houser Dr
Road
800
1000
1100
1400
1500
1700
Emerson
700
Chapin
700
Central
Bushnell
Wisconsin
Harrison
400
Hubbard
Columbus
Terrace Ln
S. Sherwood
1700
1800
700
S.E.
E. Grand
Athletic
1400
1500
Loop
Broad
E. Broad
500
1400
1500
1600

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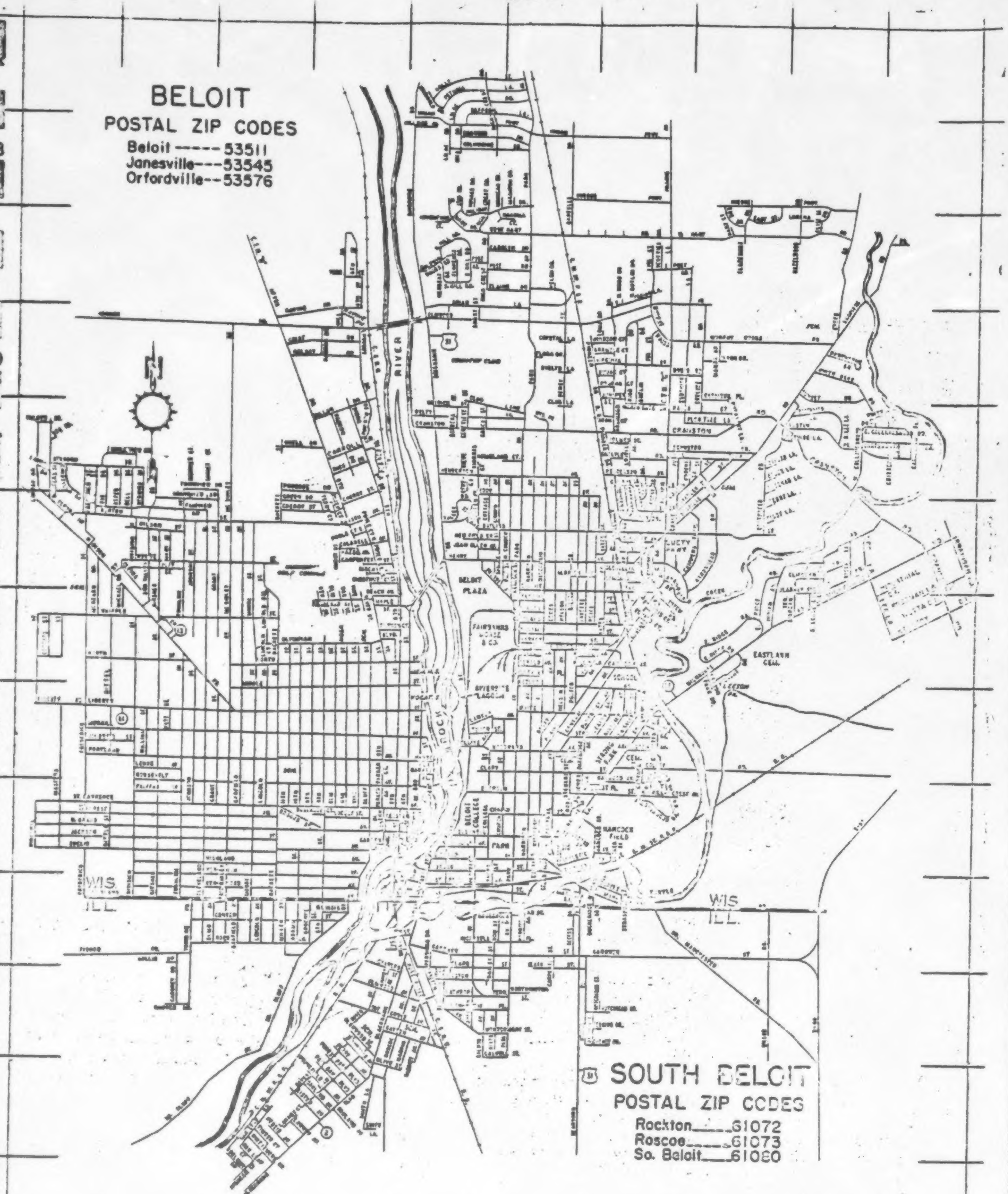
RIVER
ROCK
BELOIT PLAZA
FAIRBANKS MORSE & CO.
BELOIT COLLEGE
HANCOCK FIELD
EASTLAWN CEM.
COUNTRY CLUB
WIS.
ILL.

BELOIT
POSTAL ZIP CODES

Beloit ------ 53511
Janesville --- 53545
Orfordville -- 53576

SOUTH BELOIT
POSTAL ZIP CODES

Rockton ____ 61072
Roscoe ____ 61073
So. Beloit ____ 61080

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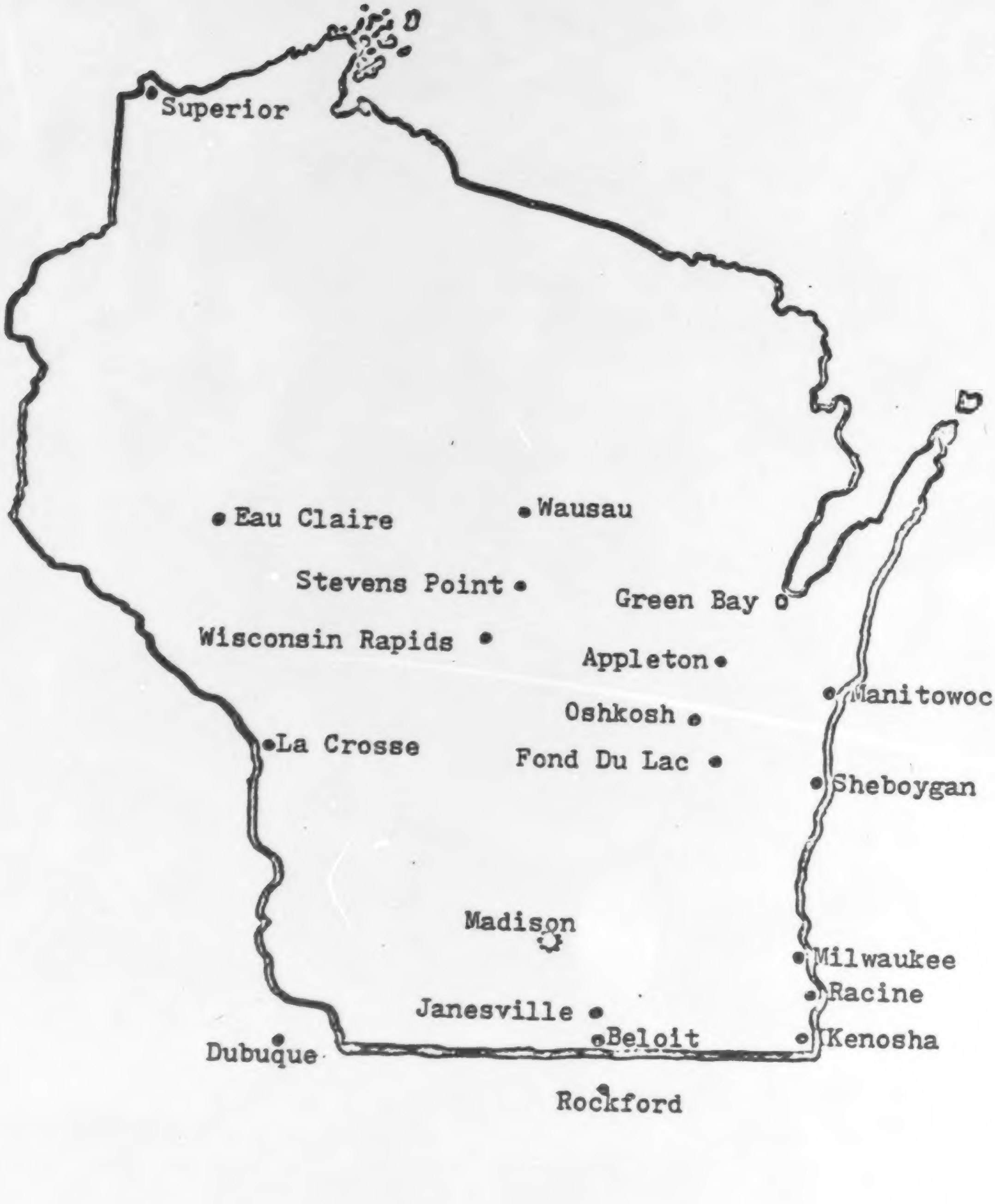
Superior
Eau Claire
Wausau
Stevens Point
Green Bay
Wisconsin Rapids
Appleton
Manitowoc
Oshkosh
La Crosse
Fond Du Lac
Sheboygan
Madison
Milwaukee
Racine
Janesville
Beloit
Kenosha
Dubuque
Rockford